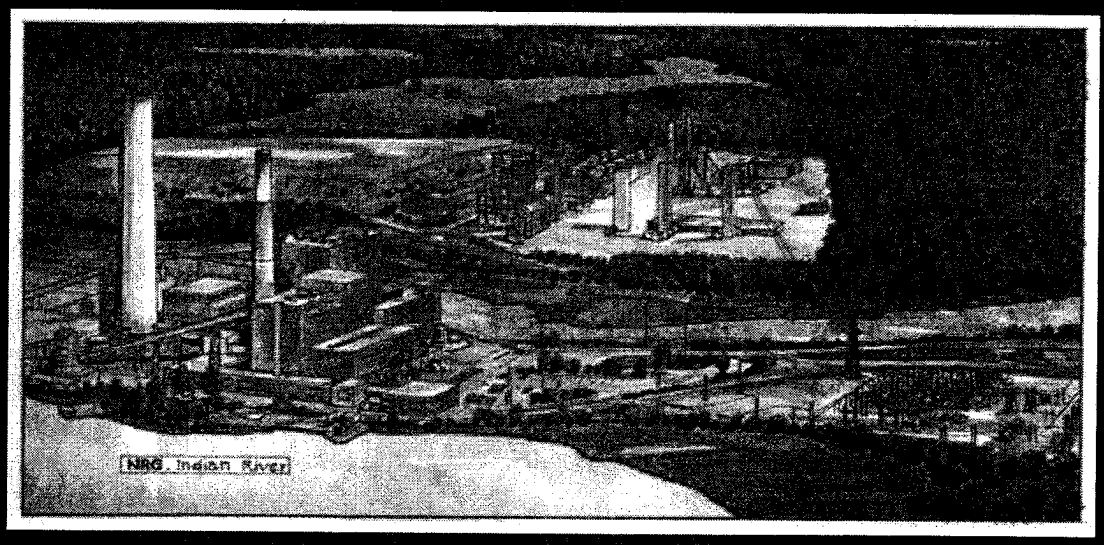
NRG Energy, Inc.

Proposed Indian River IGCC Facility
Millsboro, Delaware



Construction of Innovative Base Load Generation For Delaware

Volume 1 - Proposal

Request for Proposals :: Delmarva Power & Light

Long-Term Supply of Innovative Clean Coal Capacity and Energy

delmarva power

December 17, 2006

NRG

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Confidential/Privileged Information

NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540
Phone: (609) 524-4511
Fax: (609) 524-4501
www.nrgenergy.com

David Crane
President & Chief Executive Officer
david.crane@nrgenergy.com

December 17, 2006

BY EXPRESS MAIL AND BY ELECTRONIC FILING

Mr. Mark Finfrock
Delmarva Power & Light Company
800 King Street
Wilmington, DE 19899

Request for Proposals Pursuant to the Electric Utility Retail Customer Supply Act of 2006
Construction of New Generation Resources Within Delaware for the Purpose of Serving Customers Taking Standard Offer Service

Dear Mr. Finfrock:

On behalf of NRG Energy, Inc. ("**NRG**"), I am pleased to provide the enclosed bid to Delmarva Power & Light Company ("**Delmarva**") for 400 MW of carbon-capture ready, clean coal power from NRG's proposed innovative baseload facility to be located at our existing plant site in Millsboro, Delaware (the "**Indian River IGCC Project**").

Our project will utilize state-of-the-art Integrated Gasification Combined Cycle ("IGCC") technology to produce coal-fired, baseload power that is not only competitively priced, but also has a superior environmental footprint. In addition to low emissions of nitrogen and sulfur oxides, mercury and solid wastes, our Indian River IGCC Project will be carbon capture ready [redacted] – optimally-positioning it to compete in a carbon-constrained world, including pursuant to the Regional Greenhouse Gas Initiative. In addition to our work on carbon capture, for a number of years NRG has been at the leading edge in the evolving development of safe and feasible solutions for carbon sequestration. We are collaborating with [redacted] further push carbon sequestration towards commercial solution in Delaware. All of these benefits – together with the considerable boost to Delaware's economy both during construction and into operation of our project (over 1,000 construction and 100 additional permanent full-time jobs) – will inure to the benefit of all Delawareans.

As set out in greater detail in Section 2 of our bidder response package (Pricing and Commercial Terms), we have structured our bid [redacted] of [redacted]. As detailed in our proposal, this all-in price (i.e., energy and capacity) is competitive when compared against recent Delmarva Zone power prices and represents an affordable long-term hedge, consistent with legislative goals of price stability.

NRG is the leading wholesale power generation company in the US, with a strong financial position, experienced development team and a fundamental commitment to Delaware (which began in 2001 with our investment of over half a billion dollars for interests in five generating stations in the Mid-Atlantic as part of industry deregulation). NRG is also a leader in IGCC technology, having been actively involved in advancing developments to utilize this technology since early 2005. Unlike many others who are now proposing IGCC

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developments based largely upon publicly available "reference plant" data, NRG has undertaken detailed work to arrive at an achievable proposal. This approach, coupled with NRG's financial strength, considerable in-house project development and engineering skills and expertise operating in Delaware and PJM, serves to minimize the execution risk to Delmarva, compared to other alternatives.

We are excited by the prospect of working with Delmarva and key State agencies (including the Public Service Commission, the Director of the Office of Management and Budget, the Controller General and the Energy Office (an office of the Department of Natural Resources and Environmental Control)) to provide a new power unit at Indian River that comprehensively and optimally meets the specific requirements of the Electric Utility Retail Customer Supply Act (the "**Act**"), in terms of providing significant value to the State through:

1. Providing a resource that will utilize *innovative baseload technology* and squarely meets the specific example of "coal gasification" provided in the Act.
2. A resource that will provide *long-term environmental benefits to the citizens of Delaware*, through the construction and operation of an advanced technology plant with a superior environmental footprint, coupled with retirement of existing Units 1 and 2 at our Indian River plant upon commercial operation of the new facility.
3. Reducing the impact of new development and increasing technical and economic efficiencies through utilizing *existing fuel and transmission infrastructure*, as well as *existing brownfield or industrial sites*.
4. The use of abundant and stably-priced domestic coal, *promoting fuel diversity* and *encouraging price stability*.
5. A premier facility that is electrically located so as to *improve and support system reliability* in Delaware.

As you know, a new power plant represents an enormous capital commitment for an asset that will have a life of 30 or more years. We strongly believe that the Act and Delmarva's RFP provides a critical opportunity to incent the commercial implementation of an advanced technology like IGCC that is not only "ready for prime time", but has the ability to meaningfully address carbon and other environmental issues during the life of its operations. In fact, our work to date confirms that there are existing ideal local geological formations available for carbon sequestration in close proximity to the plant site, and these are described in greater detail in our submission. We believe that NRG is best-placed to bring realization of Delaware's farsighted plans for innovative baseload technology, together with its economic and environmental policy objectives, to fruition through implementation of our Indian River IGCC Project.

In response to the RFP requirements identified by Delmarva, our proposal is necessarily detailed – including where it deals with IGCC technology issues. As such, we encourage you and your team to arrange a meeting – at your convenience - at which we can discuss, and clarify as needed, any aspects of our bid. In any event, we remain available to answer any questions on our proposal and provide any additional information that may be helpful. Please do not hesitate to contact [redacted]

Very truly yours,

David Crane

Encs.

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WITH COPIES TO:

Lezael Rorie
ICF International
9300 Lee Highway
Fairfax, VA 22031
(Including 10 bound copies)

Jonathan Winer
La Capra Associates
20 Winthrop Square
Boston, MA 02110
(Including one bound copy and one unbound copy)

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1 Overview

1.1 Introduction

NRG Energy, Inc. ("NRG") is pleased to submit this detailed response to the Request for Proposal ("RFP") issued by Delmarva Power & Light Company ("Delmarva") for new innovative baseload power generation capacity, consistent with the economic and policy objectives of Delaware's Electric Utility Retail Customer Supply Act of 2006 (the "EURCSA"). Delaware is a significant component of NRG's core Northeast business region, and a central part of NRG's growth plan. NRG is committed to competitively developing and operating state-of-the-art power plants while reducing the environmental footprint of its business as much as possible.

NRG proposes to construct and operate a new 600 MW baseload IGCC generating unit located at NRG's existing Indian River power station. NRG is bidding 400 MW, approximately 67% of the project's total output, into the Delmarva RFP with the flexibility for Delmarva to turn down the purchased energy to 70%, or 280 MW. The Indian River IGCC Project will enter into commercial service no later than June 1, 2013. The proposed term of the PPA [redacted] although if Delmarva prefers a shorter term, NRG would agree to [redacted] PPA, with requisite pricing adjustments. NRG intends to sell the remaining 200 MWs of clean coal generation from the Indian River IGCC Project [redacted]

NRG operates one of the largest and most geographically diversified power generation portfolios in the United States, and is one of the largest coal buyers in the nation. NRG has the extensive resources and necessary project team expertise required to effectively execute and operate a large and complex undertaking such as the proposed Indian River IGCC Project. Moreover, NRG is firmly committed to the development of baseload clean coal technology and has been an active advocate for national carbon regulation. As part of this bid, NRG offers to commit to the retirement of existing Indian River generating units, which will effectively replace older, inefficient generation with cleaner, less carbon-intensive energy, without compromising the future energy needs of Delmarva.

NRG believes the proposed Indian River IGCC Project meets the spirit and requirement of the principal criteria set forth in the EURCSA. Stakeholder benefits include:

- Reliable, efficient, and economic baseload generation (using innovative technology);
- Competitive pricing and long term price stability for Delmarva;
- The efficient use of existing transmission and fuel infrastructure;
- The commercial utilization of an existing industrialized site, with minimal additional impacts to the environment;
- Dedicated generation within Delaware;
- Fuel diversity through reducing Delaware's dependence on natural gas;
- Improved electrical system reliability; and
- Long term environmental benefits to Delaware.

These key proposal features are summarized below and further expanded on throughout this document.

1.2 Innovative Baseload Generation

Technology Selection: IGCC – Integrated Gasification Combined Cycle

NRG's objective is to provide the best energy solution in response to Delaware's RFP for new, innovative, baseload generation. NRG chose IGCC as the optimal technology because, after a rigorous selection process, IGCC proved to be the most economic baseload technology with proven capability of providing reliable, affordable energy while efficiently maintaining the highest environmental standards. IGCC is also the only option which is technically capable of efficiently capturing and sequestering carbon from a solid fuel power plant in a commercially feasible manner.

During NRG's exhaustive 18-month clean-coal technology selection process, Circulating Fluidized Bed ("CFB"), Supercritical Pulverized Coal ("SCPC"), Oxycombustion and IGCC technologies were evaluated against numerous criteria. The technologies were judged in areas such as technical feasibility, environmental impact, capital and operating costs, carbon capture, performance, long term reliability and permitability. The findings are summarized in Table 1-1 below.

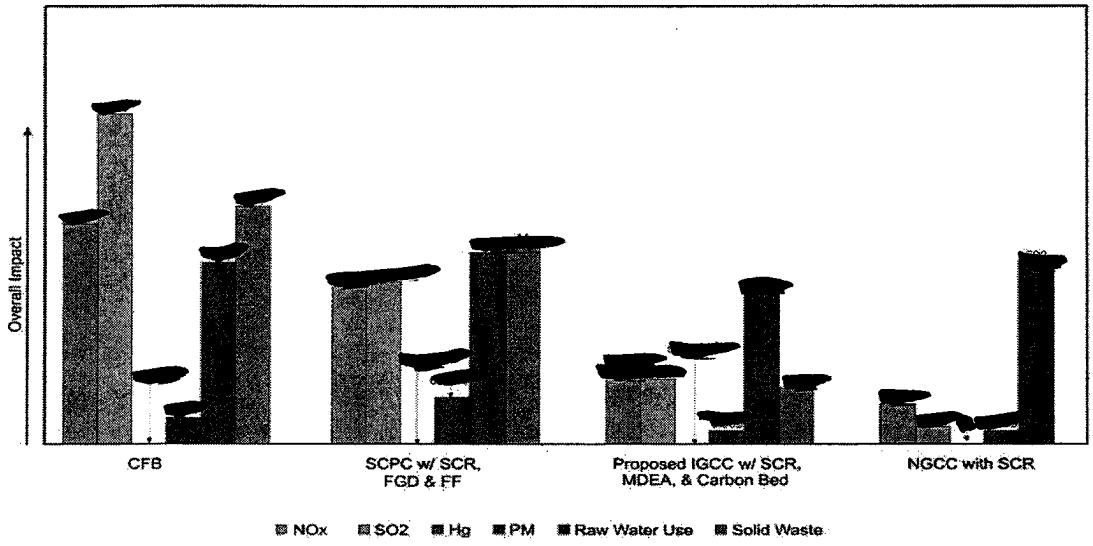
Table 1-1 Comparison of Clean Coal Technologies

	CFB	SCPC	Oxycombustion	IGCC
Ability to Implement	Commercially operational today	Commercially operational today	Not commercially available until 2020	Commercially operational today
Environmental Positives	NOx with SNCR SOx with control Hg with baghouse	NOx with SCR SOx with control Hg with FGD and baghouse	No commercially proven operating unit(s)	NOx with SCR SOx, Hg, CO_2 and PM – pre combustion removal Low water usage Low solid waste
Environmental Negatives	CO_2 Water usage High solid waste	CO_2 Water usage High solid waste	No commercially proven operating unit(s)	None
Carbon Capture Cost ($/ton)	[redacted]	[redacted]	[redacted]	[redacted]
Heat Rate (Btu/kWh)	[redacted]	[redacted]	[redacted]	[redacted]
Expected Size	[redacted]	[redacted]	[redacted]	[redacted]
Permitability in Northeast	[redacted]	[redacted]	[redacted]	[redacted]

NRG selected the IGCC technology because of its proven ability to achieve an environmental profile similar to natural gas (see Figure 1-1 below), while providing the economic and reliability benefits of a baseload solid fuel plant. Unlike the old generation of coal plants, rather than simply combusting coal to produce power, IGCC gasifies the coal into a synthetic gas ("syngas") which is fully cleaned of sulfur, mercury, and particulate matter before being used as a gaseous fuel in a state-of-the-art gas turbine power block.

The Indian River IGCC Project will utilize dual gasifier trains, feeding clean syngas to a power block consisting of two gas turbine generators, two heat recovery steam generators and one steam generator. The primary fuel will be the most economically efficient blend of lower grade domestic coal augmented opportunistically with petroleum coke and biomass. For greater power reliability, the gas turbines will be capable of operating on either the coal-derived syngas or ultra-low sulfur oil. Oil will be used for startup pre-heating and as a temporary back-up fuel to bridge minor outages of the gasifiers. [redacted]

Figure 1-1 Comparative Environmental Performance of Generating Technologies



Choice of Technology Provider

With hundreds of gasifier units operational or planned across the world, and with the large number of combined cycle power plants, IGCC is established as a viable, commercial technology and is positioned to be the next generation of solid fuel power plants. NRG chose [redacted] gasification technology as a design basis for the Indian River IGCC Project due to the ability of [redacted] gasifiers to reliably and efficiently accept a diverse range of fuel types and qualities. [redacted]

Notwithstanding our focus on Shell's gasification technology, NRG has been working for over a year on technology evaluation, preliminary design and commercial tradeoffs. NRG's choice of technology vendor for the Indian River IGCC Project will be the result of a competitive evaluation process which compares capital costs against operational costs under an array of fuel types, as well as the level of vendor and contractor support for the development and construction of the Project. Final selection criteria will include:

- Strength of commercial guarantees and support;
- Long-term operating and maintenance costs;
- Overall manufacturing experience and maturity of technology;
- Operability, reliability and maintainability;

- Fuel flexibility; and
- Quality and marketability of solid byproducts.

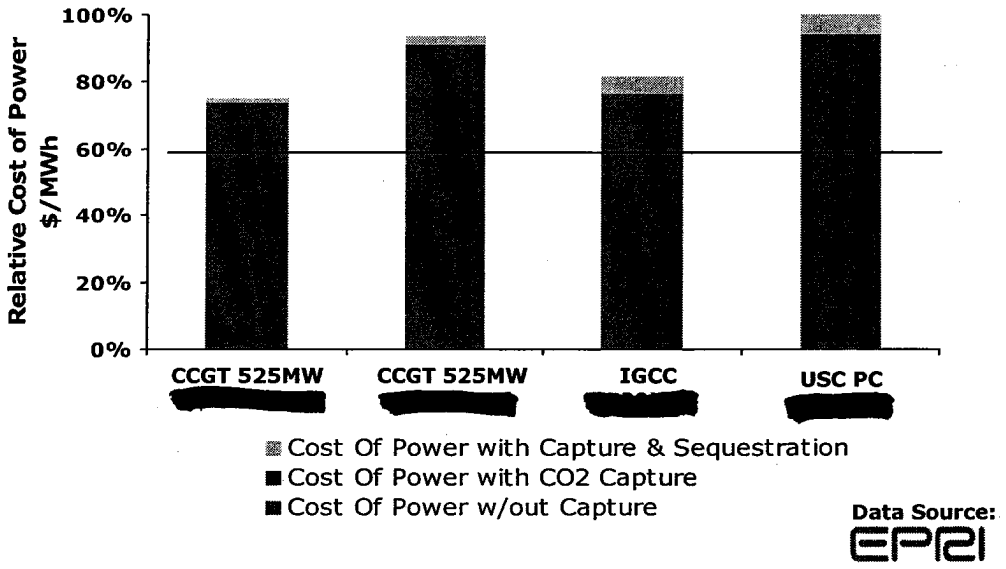
NRG plans to conclude its commercial evaluation process and finalize technology vendor and construction contractor choice in tandem with the finalization of a long-term PPA.

An in-depth discussion of NRG's technology evaluation program, gasification and IGCC is provided in Section 3.

IGCC Is Cost-Competitive

As shown in Figure 1-2, EPRI has concluded that IGCC can compete directly with a state-of-the-art natural gas plant with delivered natural gas prices as low [redacted] a relatively low gas price level not seen in Delaware for over five years and not likely to be seen again (see Figure 1-8 for details). Similarly, EPRI shows IGCC as being economically competitive even compared to an ultra-efficient traditional coal plant. However, when the additional costs of carbon capture and sequestration are included, IGCC is by far the most economical generation type with carbon capture, [redacted] NRG is publicly committed to a responsible, national carbon policy and views IGCC as the unequivocal low cost solution for Delaware to meet all future carbon regulations.

Figure 1-2 Comparative Cost of Power: IGCC vs. PC vs. Natural Gas With and Without Carbon Capture/Sequestration (EPRI data)



Why Not Wind?

NRG believes in the viability of wind power. In fact, NRG owns a premier wind power development subsidiary and is actively developing wind projects in several states. Notwithstanding this, NRG deliberately chose not to bid a wind project into Delmarva's RFP. We arrived at that conclusion after carefully considering the spirit and letter of Delaware's policy objectives set forth in the EURCSA. NRG concluded that it could not meet Delaware's legislated policy objectives by proposing a wind project for the following reasons:

- **Wind Is Not Baseload Generation:** EURCSA expressly called for innovative "baseload" technology. Wind energy is inherently not baseload since it's only available when the wind blows – it is classified as an "intermittent" and "non-dispatchable" resource. While offshore wind farms are expected to have a higher capacity factor than land-based farms, this is still only in the range [redacted] Recent studies indicate that it is precisely when the air conditioning is being turned on and electricity demand is peaking—on hot, still summer afternoons—that the wind turbines are prone to becoming "still" as well. On average, most wind projects rarely produce more than 35-40% of their nameplate capability in any given year.

- **Wind Is "Greenfield" Development:** The development of a significantly large [redacted] wind farm is unavoidably a "greenfield" endeavor that will disturb a large area whether on land or offshore. This is in direct conflict with EURCSA's mandate for projects that utilize existing industrial or brownfield areas.

- **Wind Will Require New Transmission:** By its very nature, a large [redacted] wind project will very likely require an extensive network of additional power lines and perhaps a significant transmission line to interconnect with the Delaware grid. This is an absolute certainty for any offshore wind project. Again, this is in direct conflict with EURCSA's mandate that projects utilize existing transmission.

- **Wind Farms Are Expensive:** Wind farms, particularly offshore wind farms, are extremely expensive and are no more certain to be working when needed than onshore wind has proven to be. Moreover, Delaware would have to contract for additional conventional capacity to ensure reliable supply. This high cost coupled with unpredictable availability of supply is in direct conflict with EURCSA's mandate for price stability.

- **Offshore Wind Farms Are Unproven In A Hurricane Zone :** The mid-Atlantic coastline is vulnerable to multiple hits by significant hurricanes each summer season. Simply put, wind turbines cannot withstand a direct hit by a major hurricane. NRG believes it would be imprudent to develop an offshore wind project in an area susceptible to hurricanes and would not do so.

These points notwithstanding in the context of the current RFP and the clear EURCSA mandate, NRG is committed to renewable wind power development and would be very interested in providing a highly competitive renewable energy bid should Delaware choose to issue a subsequent RFP soliciting long term renewable energy projects. NRG would seek to develop such a wind project on land and not offshore. Furthermore, NRG recommends that Delaware limit the size of a renewables solicitation to 50-100 MW; a manageable as-available project size that may also prove a better fit for Delmarva's load profile.

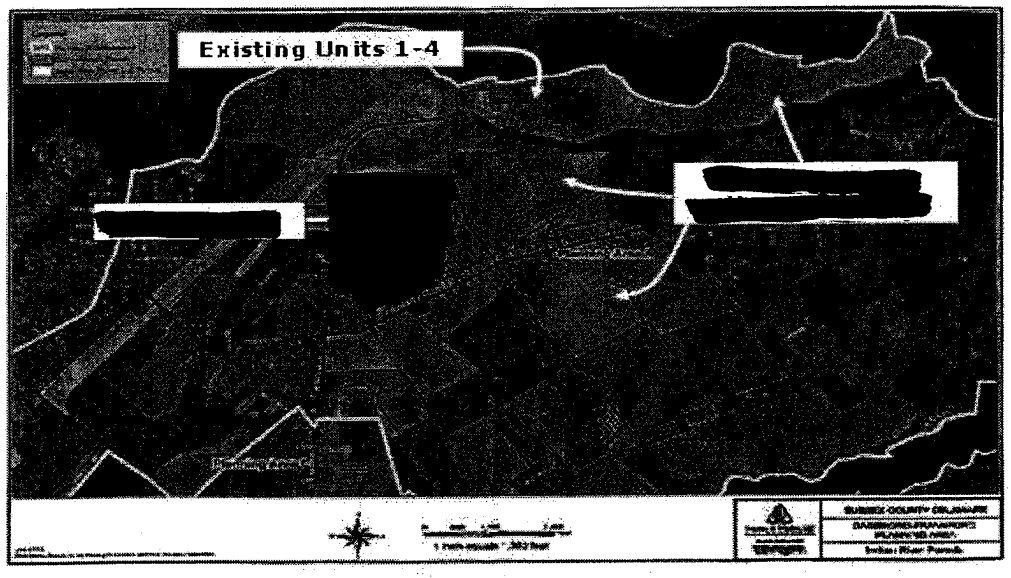
1.3 Existing Industrial Site in Delaware

The Indian River IGCC Project will be located within the boundaries of NRG's [redacted] Indian River station in Millsboro, Delaware; an industrialized site with over 50 years of onsite coal-fired power generation. The Project will occupy approximately [redacted] adjacent to the existing four generating units at the Indian River site as shown below in Figure 1-3. The existing generating station occupies approximately [redacted] in addition to [redacted] of nearby ash landfill space. The Indian River site is clearly adequate for the development, construction and long-term operation of the proposed Project. [redacted]

NRG will be able to leverage many benefits by siting the project on the existing Indian River site, including:

- Commercial, environmentally responsible reuse of a brownfield site already zoned for heavy industrial use;
- Widespread local, state, and national support;
- Increased probability of securing required permits and necessary project financing;
- Adequate existing cooling water withdrawal infrastructure;
- Ability to use Millsboro's recycled water for 100% of its process water needs;
- Adequate existing road and rail transportation infrastructure;
- Adequate land area and established land use for ash land filling;
- Sufficient labor resources together with high demand for local economic development;
- Dramatically reduced environmental impact at current site; and
- Satisfies the 500 MW projected load growth in Delmarva Zone by 2010.

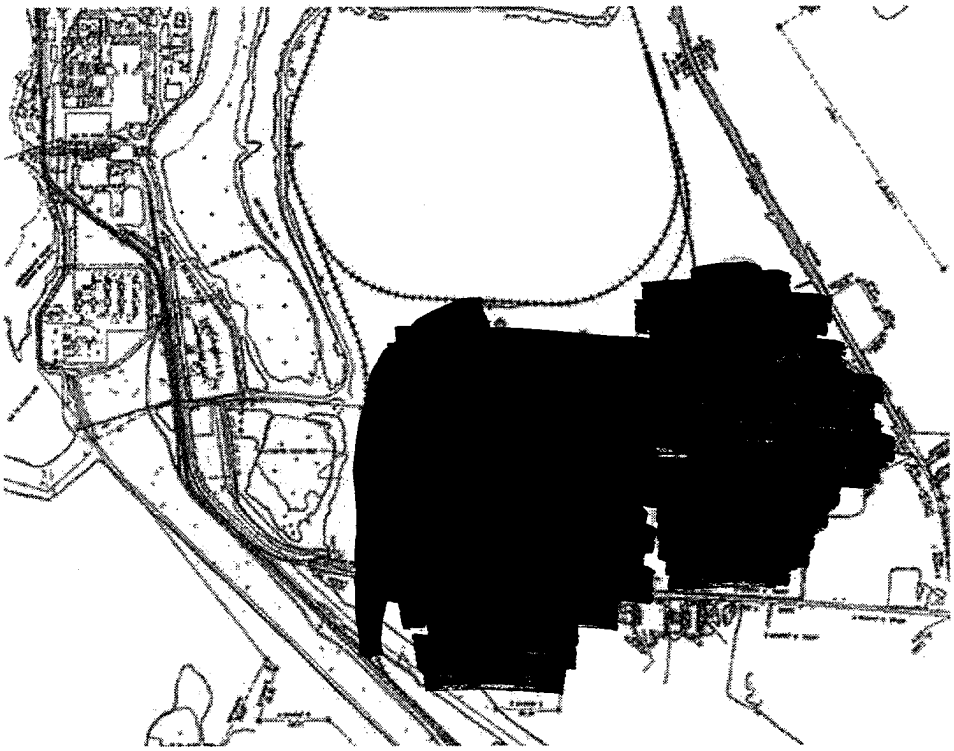
Figure 1-3 Indian River Property and Project Site



The Sussex County land map in Figure 1-3 shows the land controlled by NRG, including the Indian River IGCC Project site, relative to the existing generating units. The Indian River site photo in Figure 1-4 provides an aerial view of the existing units together with the overall project site and existing Delmarva substation. Figure 1-5 shows the arrangement of the IGCC plant itself [redacted], all within the boundaries of the property currently owned and controlled by NRG.

Figure 1-4 Indian River Site Photo

Figure 1-5 IGCC Project Site Plan



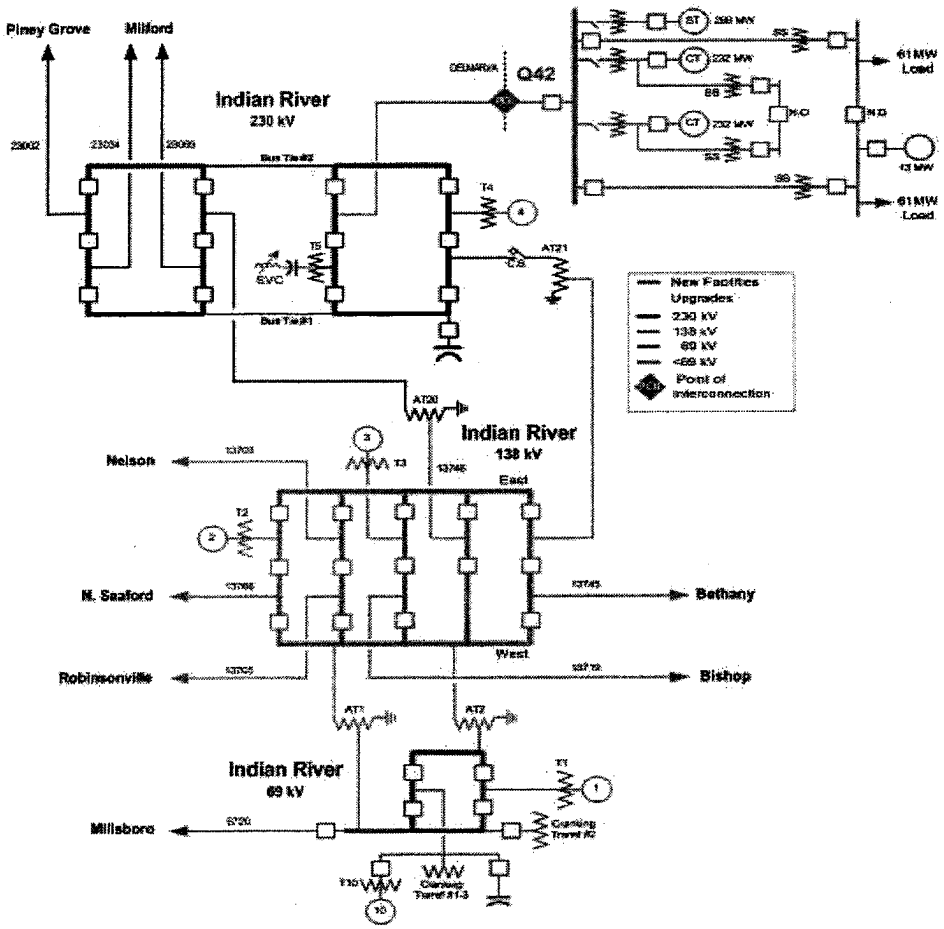
1.4 Existing Fuel & Transmission Infrastructure

Fuel Infrastructure

By using the same roadways and railways as the existing Indian River units, the Indian River IGCC Project will have minimal impact on the State's transportation infrastructure. All solid fuels, [redacted] will be delivered by the existing Delaware rail infrastructure. Any biomass delivered to the Project will most likely be delivered through a combination of truck and rail. The [redacted] rail company will be the primary fuel transporter. [redacted] system can readily accommodate the net incremental fuel deliveries to the Indian River site. [redacted]

[redacted]

Figure 1-6 Project Interconnection & Transmission



Transmission Infrastructure

The Indian River IGCC Project will interconnect to the existing Indian River 230 kV substation and will utilize the existing Delmarva transmission system as shown in Figure 1-6. PJM has already concluded there is sufficient capacity in the local and regional transmission system to handle the incremental electrical output from the Indian River IGCC Project with few, if any, upgrades required. All required interconnection filings have been submitted and are in process. Interconnection costs are projected by PJM to be less than [redacted]

1.5 Fuel Diversity

The Indian River IGCC Project will provide fuel diversity to Delaware by using a blend of lower cost coals and other solid fuel feedstocks and also by not relying on natural gas as its primary fuel. This allows NRG to offer lower long-term energy prices while also ensuring energy price stability.

Fuel Flexibility

By gasifying rather than combusting the coal feedstock, IGCC technology is inherently capable of providing greater fuel flexibility than conventional coal plants. Additionally, the type of gasifiers provided by Shell and Mitsubishi use a dry fuel feed design, further enhancing their ability to handle lower grade fuels like high sulfur, sub-bituminous or lignite coal; low volatile fuels like petroleum coke, and most types of biomass. This fuel flexibility allows the Indian River IGCC Project to access a lower fuel price, translating directly into a lower cost of energy than any other clean-coal technology.

Coal

At current consumption rates, the U.S. has over 250 years worth of proven coal resources, which equates to more energy potential than the entire supply of oil in the Middle East. Additionally, domestic coal is the lowest cost fuel available. By sourcing stably priced, eastern bituminous coal as a primary feedstock, the Indian River IGCC Project will provide Delaware with a natural, long-term hedge against energy price volatility associated with natural gas.

Petroleum Coke

Coal will be augmented opportunistically with lower cost petroleum coke, a high energy solid byproduct of regional oil refineries. Although petroleum coke is easily gasified in an IGCC, it is difficult to combust in a conventional coal plant and has historically been priced at a discount relative to coal because of its high sulfur content and poor combustion characteristics. Petroleum coke production has been steadily increasing over the past several years because refiners are being driven to process heavier and higher sulfur crude oil. As a result, petroleum coke prices have generally declined. Further, petroleum coke will be produced as a byproduct of the refinery industry, regardless of its market price.

Biomass

The Indian River IGCC Project will seek to secure sources of qualifying biomass feedstock for up [redacted] of its fuel needs. Every megawatt-hour of energy produced from biomass will be designated as a Renewable Energy Credit ("REC") in accordance with Delaware's Renewable Energy Portfolio Standards. Delmarva will not be charged an additional premium for RECs produced by the Project.

1.6 Supports System Reliability

Both the Federal Energy Regulatory Commission and PJM recognize baseload generation at Indian River to be an essential element of ongoing system reliability within the Delmarva Peninsula. The Indian River IGCC Project maintains and strengthens Delaware's system reliability, and provides a necessary mitigant to the dual challenges of load growth and retirement of aging regional plants. Were Delaware to wait for new transmission lines, the system would become dependent on a solution that historically takes between ten and thirty years to develop and build. The Indian River IGCC Project will provide dedicated, long-term, clean energy capacity within the next decade.

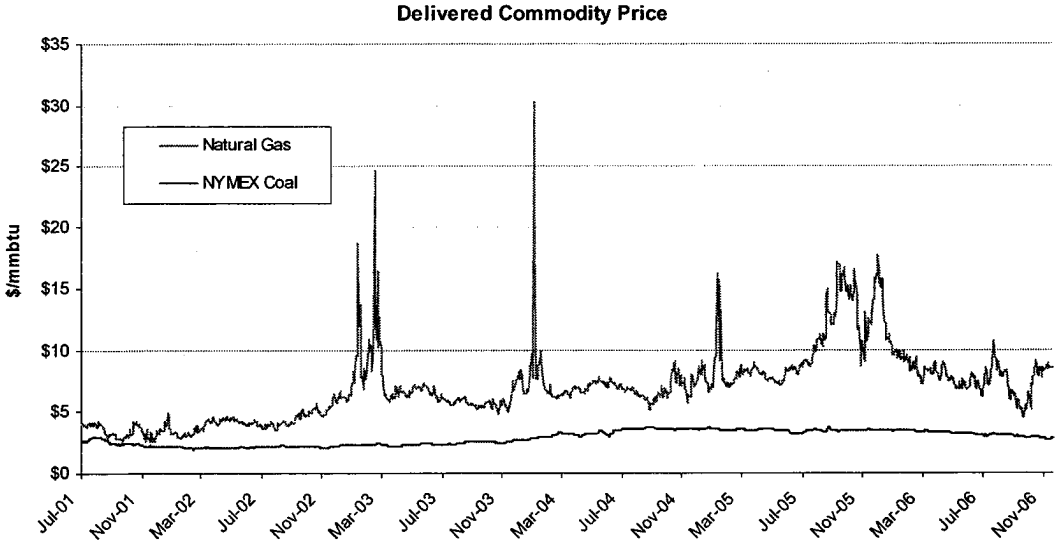
Earlier this year, FERC testimony into the PJM Reliability Pricing Model ("RPM") capacity market process articulates the challenge posed to the reliability of Delaware's energy system by the escalating demand growth concurrent with supply retirement. An excerpt of that testimony is provided below:

2006 FERC testimony to PJM regarding system reliability -

"Between 1999 and 2002, 274 megawatts were retired in the Mid-Atlantic region. From January 1, 2003 through June 22, 2005, 1,709 megawatts have been retired, and an additional 1,694 megawatts are proposed for retirement before 2008. Forty percent of the retirements (including those currently proposing to retire) since 2003 are located in New Jersey. Owners of retired generation point to excess generation in the Western region of PJM and their inability to compete economically. These retirements have led to identified reliability criteria violations for 2005 and each succeeding year in the most recent planning horizon (through 2009). Retirements in the Baltimore-Washington area in 2003 *are **projected to result in reliability criteria violations for** the Baltimore-Washington and **Delmarva Peninsula by 2008.*** Some identified violations may be resolved by planned transmission upgrades, but such upgrades are only a temporary solution. ***PJM states that unless additional generation is sited in those areas, further load growth would require more extensive and costly transmission upgrades. There is a risk that such transmission upgrades would not be built in time. Further, delaying retirements can be only a temporary solution as many of the units are near the end of their useful life"***

"..... violations are to be resolved by planned transmission upgrades, but those are only a temporary solution. Unless additional generation is sited in these areas, further load growth would require more extensive and costly transmission upgrades. Moreover, any additional ***unanticipated retirements in either Baltimore-Washington or the Delmarva Peninsula could cause these areas to experience load deliverability violations*** similar to those in New Jersey."

Figure 1-7 Daily Natural Gas vs. Coal Prices – Eastern PJM



1.7 Price & Price Stability

Real Energy Price Stability

Market energy prices are largely driven by the volatile, underlying, natural gas market, and an over reliance on that market leaves Delaware vulnerable to rising energy and fuel prices. Skyrocketing demand in both industrial and residential sectors, compounded by insufficient transportation and storage infrastructure, is expected to elevate the cost of natural gas far above other fuel supplies in the medium and long term. By comparison, the price of coal is shown to be insensitive to the volatility of natural gas and is historically proven to provide consistent price stability. The Indian River IGCC Project offers Delaware a long-term hedge against the volatility of the natural gas market, and price protection from any resulting shocks and increases to energy prices.

Absent a long-term contractual commitment to secure baseload power from a clean-coal facility such as the Indian River IGCC Project, all material incremental generation builds in the Delaware-PJM market will most certainly continue to come from natural gas. Although natural gas plants are far less difficult and expensive to construct, all energy from these plants is completely dependent on escalating natural gas prices. Continued short term market purchases for long term power needs will lead to an inexorable cycle of energy price increases and volatility. In any evaluation of proposed new resources, the life-cycle cost of new generation needs to be carefully considered. While gas-fired generation (for example) may have a lower capital cost to construct, over its operating life – including fuel costs – a baseload advanced clean coal plant is likely to provide much greater overall power price stability to Delmarva, reflecting comparative fuel input costs.

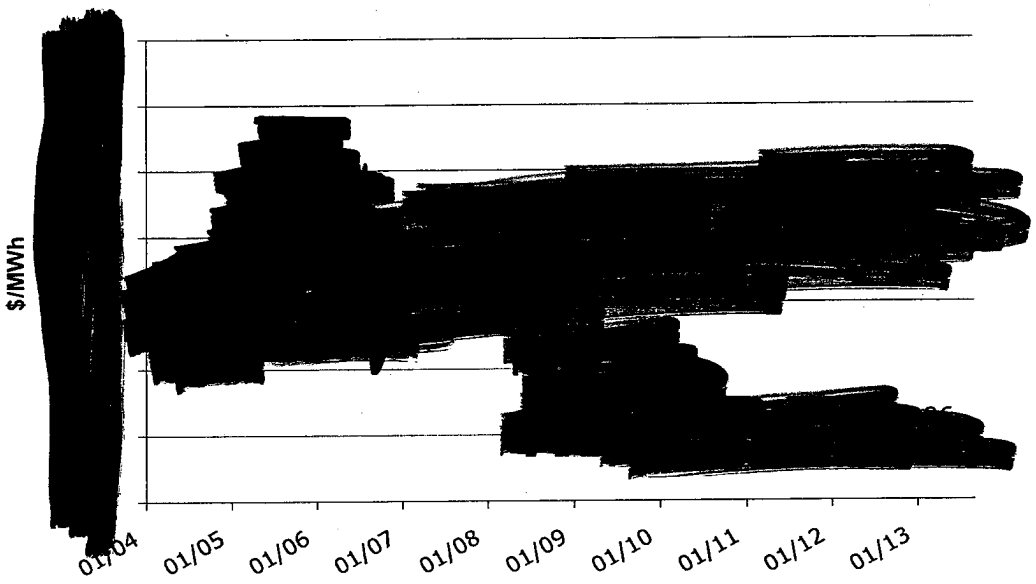
Real energy price stability can only be secured through a baseload energy supply which is not subject to volatile market forces. The Indian River IGCC Project offers Delaware 400 MW of contracted capacity capable of providing energy economically insensitive to the volatility of the underlying natural gas

market. The resulting price protection provided to Delaware by the Indian River IGCC Project is material. For example, when natural gas prices hit delivered levels of $15/MMBtu (as they did during 2005), Delaware's SOS ratepayers will be positioned to avoid over $150 million annually in increased power costs by being able to source energy from a clean coal facility.

The price stability derived from dedicated coal-based generation in Delaware is clearly illustrated in Figure 1-7 above. Delivered coal prices in the eastern PJM region steadily average around $2 - $3 per MMBtu, while natural gas is consistently 300% - 500% higher than coal (occasionally 1,000% higher), and subject to volatility and spiking.

In addition to the inherent stability of coal prices, NRG's bid insulates Delmarva's customers from fuel transportation price risk. [redacted]

Figure 1-8 Offered Price vs. Market Price Trend



Affordable Pricing

There's an inherent tension between securing long-term price stability and securing the lowest short-term pricing. Building a new coal baseload power plant costs significantly more than nearly all other types of generation (with the possible exception of wind – especially that based offshore). Nevertheless, the calculus of energy production has repeatedly proven that the right type of higher cost capacity will result in lowest long-term cost of energy.

NRG's proposed Indian River IGCC unit involves a material investment in the State of Delaware in excess of $1 billion, and is able to offer all-in, long-term energy [redacted] Short term market purchases by their nature will be challenged to be able to deliver on stable and predictable prices to Delaware's SOS customers [redacted] The retirement of the existing regional fleet

of baseload plants will remove the underpinnings of low cost energy production, and amplify the affects of natural gas on energy prices.

Compared to the significant fluctuations in the historic PJM market prices over the past several years, NRG's bid price for the Indian River IGCC Project modestly increases in step with predictable macro factors such as inflation, and represents a timely and efficient offset to upward price pressures.

Summary Commercial Offering

Quantity & Delivery Point

NRG proposes to enter into a long-term [redacted] PPA with Delmarva to deliver 400 MW of innovative baseload, carbon capture ready capacity and energy from its 600 MW Indian River IGCC Project. Delmarva's pro rata share of energy purchase in any given payment period will be 400/600 (or 66.67%) of the total actual energy production from the new plant. Energy will be delivered to Delmarva at its existing 230kV Indian River substation.

[redacted]

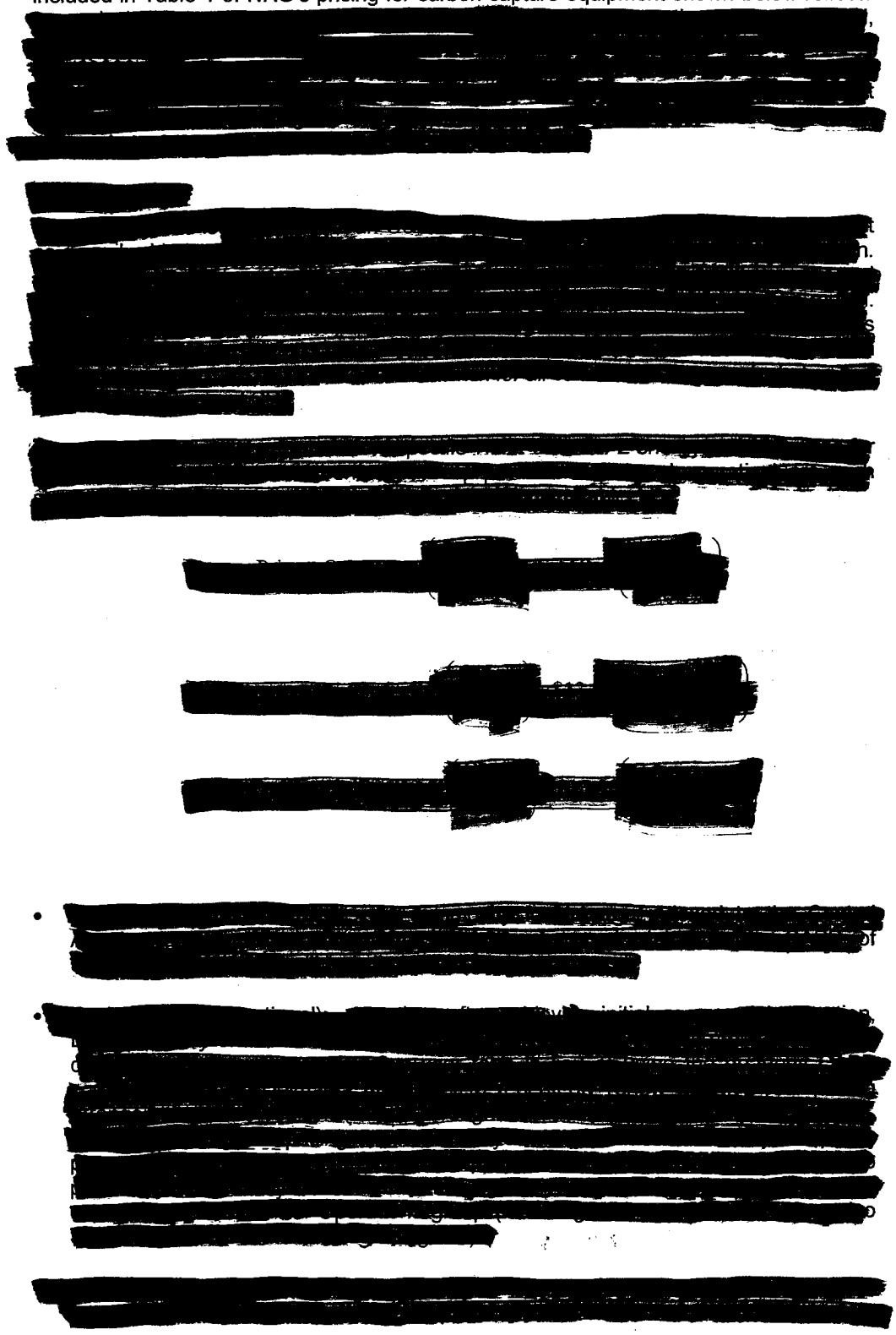
Turndown [redacted]

Responsive to Delmarva's concerns about limited Standard Offer Service ("SOS") load requirements at certain times, NRG has specifically structured its offer to incorporate an effective turndown ability for Delmarva, [redacted]

Carbon Capture Option

NRG is offering Delmarva the option to have the carbon capture equipment installed as part of the initial Project build, ready for commercial operation [redacted] or to install such equipment at some future date – selected by Delmarva. Installation of carbon capture equipment on an IGCC facility can be done effectively and without compromising the integrity of the plant post-initial construction.

Pricing for installing the carbon capture equipment as part of the initial Project build is included in Table 1-3. NRG's pricing for carbon capture equipment shown below reflects



[redacted]

Table 1-2 Consumer Price Index – Northeast

	161.4	162.2	162.8	162.9	163.0	163.1	163.4	164.0	164.6	165.1	165.4	165.7	163.6	162.6	164.7
	166.2	166.9	167.3	167.1	166.8	167.0	167.6	167.8	168.4	168.7	168.5	168.4	167.6	166.9	168.2
	168.8	169.1	169.3	169.5	169.4	169.6	169.9	170.5	170.6	171.3	171.2	171.2	170.0	169.3	170.8
	171.4	171.6	171.9	172.8	172.8	173.1	173.4	174.1	174.8	175.5	175.5	175.5	173.5	172.3	174.8
	176.2	177.6	178.5	178.5	178.4	179.0	179.8	179.9	180.7	181.2	181.5	181.3	179.4	178.0	180.7
	182.2	182.8	183.7	184.2	184.6	185.3	185.0	185.1	185.1	185.0	185.0	184.2	184.4	183.8	184.9
	184.9	186.1	187.0	187.8	187.7	187.8	188.3	189.3	189.5	189.9	190.1	189.6	188.2	186.9	189.5
	190.5	191.7	193.0	192.6	192.7	192.8	193.5	194.3	195.0	195.4	195.1	194.9	193.5	192.2	194.7
	195.9	196.8	198.6	199.4	199.9	201.1	201.0	201.0	201.2	202.5	202.6	201.9	200.2	198.6	201.7
	202.6	203.6	206.0	206.9	206.2	206.2	207.9	208.7	210.8	211.5	210.0	209.0	207.5	205.3	209.7
	211.0	211.6	212.8	214.7	215.7	216.7	217.5	218.1	216.3	215.2				213.8	

Series Id: CUUR0100SA0 **Source - www.bls.gov** **CPI -** **217.3** **- 3rd quarter 2006 average**
Not Seasonally Adjusted
Area: Northeast urban
Item: All items
Base Period: 1982-84=100

- Renewable Energy Credit ("REC") Rate: Any REC produced by the Indian River IGCC Project resulting from the use of qualifying biomass fuel [redacted]

[redacted]

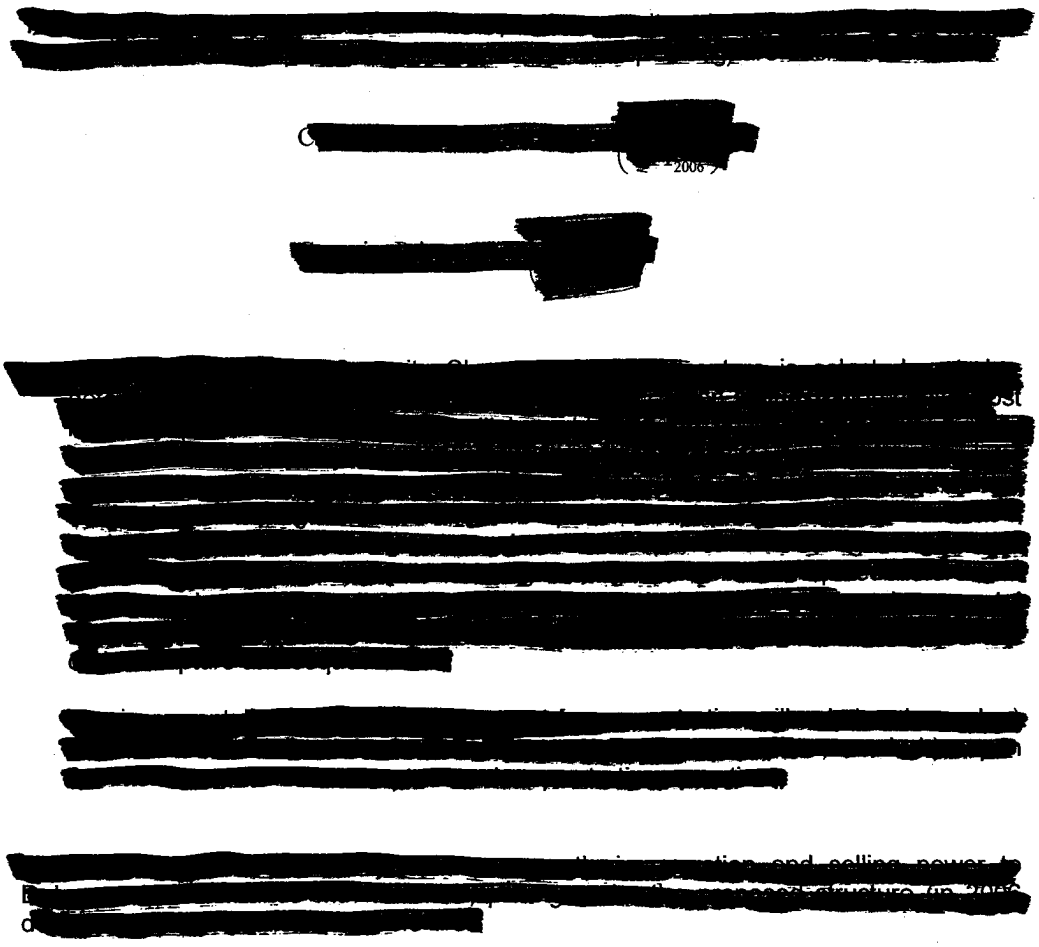
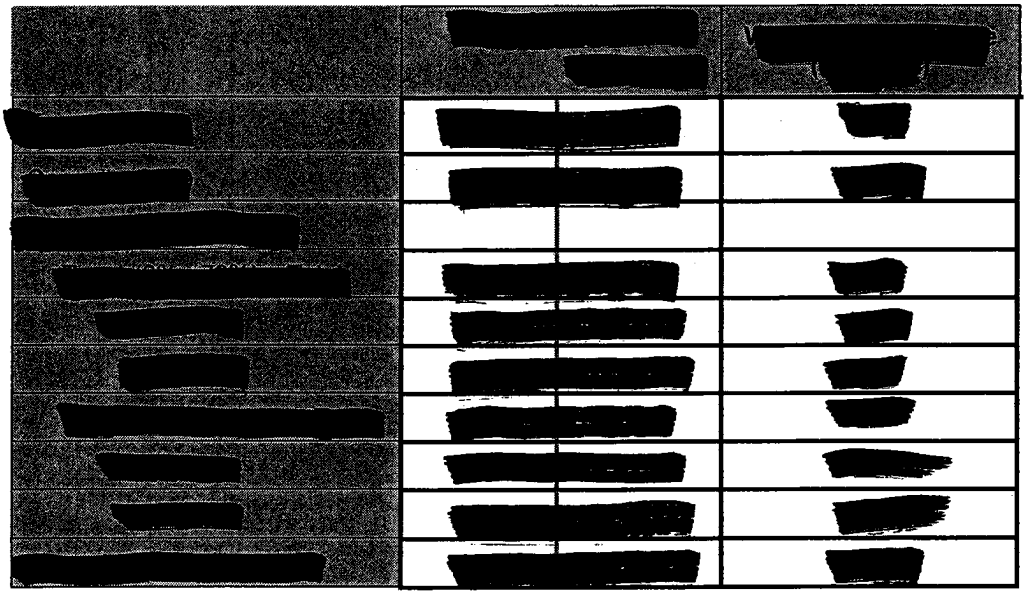


Table 1-3 Proposed Project Pricing For Energy and Capacity



[redacted]

Notes:

[redacted]

Table 1-4 Target Annual Equivalent Availability and Seasonal Adjustment Factors

[redacted]

1.8 "Baseload Bridge to IGCC" Energy Pricing

As additional value that NRG is able to deliver to Delmarva, given the need for near-term generation in the State, and further to the proposed pricing for the Indian River IGCC Project, NRG is offering a "baseload bridge to IGCC" energy product to Delmarva. NRG proposes entering into an optional agreement with Delmarva to supply [redacted] firm round-the-clock baseload energy delivered into the Delmarva Zone from NRG's existing Indian River station. [redacted]

Table 1-5 Price Schedule For [redacted] From Indian River

[redacted]

1.9 Long Term Environmental Benefits for Delaware

Overall Superior Environmental Performance

NRG's Indian River IGCC Project is at the forefront of environmentally responsible energy generation. IGCC technology is environmentally superior to conventional pulverized coal ("PC"), circulating fluidized bid ("CFB"), and oxycombustion technology with emissions profiles approaching that of a natural gas plant. Again, this is clearly illustrated by the USEPA data shown in Figure 1-1 above in Section 1.2. Simply put, gasification provides the cleanest possible method of coal-based power production. As shown, IGCC's environmental advantages include:

- Drastically reduced emissions profile compared with a PC plant:
  - NOx and SOx can be removed to levels far below those using PC;
  - Over 95% Mercury removal;
  - Particulate matter is virtually eliminated; and
  - Before the addition of carbon capture technolog
- Water consumption is less than PC; and
- Solid waste production is less than PC and all solid waste from an IGCC is a saleable byproduct; elemental sulfur, slag and high quality fly ash.

Less Water

In addition to consuming 30% - 50% less water than a conventional coal plant, 100% of the Indian River IGCC Project's fresh process water will be recycled water from the city of Millsboro's new water treatment facility, with new wells used only as backup and for minimal potable water needs. Using Millsboro's recycled water solves a significant waste water disposal problem facing the city and the Department of Natural Resources and Environmental Control ("DNREC"). Cooling water will come from the cooling discharge of the existing Indian River units and thus no additional cooling water will be withdrawn from the Indian River.

Less Waste - Saleable By-products

The Indian River IGCC Project will have no liquid discharge from its process water system. The modest cooling tower blow down flow will be discharged back to the river. The resulting high grade solid by-products of sulfur and low carbon ash and slag will be aggressively marketed to mitigate land filling. Many by-products of the gasification process can be sold as inputs to other industries. The sulfur removal process in the IGCC produces pure, elemental sulfur which has commercial value in a variety of industrial processes. Slag from the gasifier is an inert, non-leachable, glass-like substance that is used as a substitute to natural aggregates in various manufacturing processes as well as a proven road bed material. Low carbon fly ash is a highly sought after feedstock for cement manufacturing and has a far higher quality than is produced by conventional coal plants. The relatively small amount of other solid waste produced by the Indian River IGCC Project will be disposed of either on-site under NRG's existing landfill permits, or transported to specialty disposal sites.

Carbon Capture & Sequestration

No other environmental issue has galvanized scientists, world leaders and citizens alike, than the threat posed by global warming through greenhouse gas emissions. NRG believes this issue may well be on par with the worker safety revolution that occurred at the beginning of the last century when society woke up to the realization that the safety of individual workers transcended cost concerns: it just had to be done.

A recent op-ed piece in the New York Times stated the following about global warming and IGCC:

> "What's so frightening about this for those worried about the long-term consequences of [global] warming is that nearly all of these [coal] plants are being built along traditional lines, burning pulverized coal to make electricity. And what's sad about it is that there's a much cleaner.....technology available. Known as I.G.C.C. – for integrated gasification combined cycle – this cleaner technology converts coal into a gas before it is burned.
>
> These plants produce fewer of the pollutants that cause smog and acid rain than conventional power plants do. More important, from a global warming perspective, they also have the potential to capture and sequester greenhouse gases like carbon dioxide before they enter the atmosphere."

IGCC does indeed make possible the capture and sequestration of [redacted] the Project's carbon dioxide (CO_2) that would otherwise be released as a greenhouse gas. Carbon capture is currently limited [redacted] solely by the ability of gas turbines to handle hydrogen enriched syngas fuel and not by some inherent limit of IGCC itself. This is a temporary constraint that will be removed as equipment manufacturers (e.g., GE, Siemens, Mitsubishi, among others) develop gas turbines capable of running on 100% hydrogen syngas. NRG is offering Delaware the option to either include [redacted] carbon capture from Commercial Operation, or to add it at a later date. Thus, the Indian River IGCC Project offers Delaware an unprecedented opportunity to demonstrate its commitment to meaningfully addressing global warming while continuing to ensure affordable and reliable baseload energy to underpin the State's growth into the future.

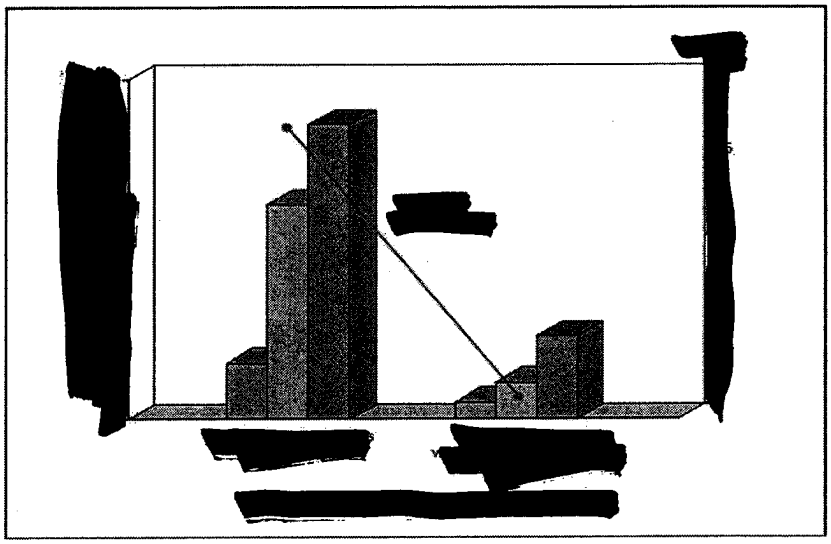
NRG has conducted studies that have concluded that the geological formations underlying the Indian River site are excellent candidates for carbon sequestration. Based on studies to date, experts believe that viable sequestration of CO_2 emissions from the Indian River IGCC Project can be reliably achieved. While the costs and performance impacts of carbon capture on the IGCC Project are relatively well understood and reflected in the optional carbon capture pricing provided herein, NRG is continuing to investigate and develop specific plans and definitive costs for the actual sequestration (in-ground injection into deep saline aquifers). [redacted]

Retirement of Existing Indian River Coal Units

As a particular value that NRG alone is uniquely placed to offer to Delmarva and the State, as part of this RFP response, NRG will commit to permanently retire coal units #1 and #2 at the existing Indian River facility, concurrent with start-up of the Indian River IGCC Project. All unit retirements are contingent upon a PPA award for the Indian River IGCC Project and its entry into commercial operation. The resulting net increase in installed capacity from the overall Indian River plant will be approximately 416 MW, representing a 55% capacity increase. More importantly, the low marginal cost of energy from the Indian River IGCC Project and corresponding high capacity factor will increase Indian River's annual energy production to Delaware consumers [redacted] Most significantly, this increase in stable long-term energy will simultaneously result in a [redacted] reduction in emissions per MWh of energy produced as illustrated in Figure 1-9

The shutdown and retirement of units #1 and #2 would occur upon the Indian River IGCC Project entering into commercial service. The retirement of these units, in conjunction with the investment into the IGCC project, represents a significant contribution by NRG to the future long term environmental benefits for all Delawareans.

Figure 1-9 Air Emissions Impact Reduction



1.10 Permitting and Community Support

Locating the new IGCC Project at the existing Indian River facility will maximize commercial utilization of existing industrial and electrical infrastructure. It will also minimize or fully avoid construction external to the site and minimize corresponding impacts on local communities. It is expected that the Project's extensive use of existing infrastructure, small environmental footprint, and near term retirement of the oldest Indian River coal units, will allow for a relatively swift permitting process.

Power production is an established heavy industrial use at the Indian River site that dates back to early 1950's and predates passage of the 1971 Delaware Coastal Zone Act (the "CZA"). Constructing a new generating unit at the Indian River site is an allowed expansion of an existing heavy industry under the CZA. Therefore, NRG expects that the Indian River IGCC Project will secure the needed Coastal Zone permit.

The Indian River IGCC Project will provide more than 1,000 construction jobs over the four year construction phase and around 100 incremental highly paid direct full-time operations jobs to the lower Delmarva Peninsula – a material economic "shot-in-the-arm" for Delaware with material long-term economic benefits. [redacted]

On June 21, 2006 NRG publicly announced the Indian River IGCC Project and since then has received ongoing support from a broad array of stakeholders. The volume of support letters already received by NRG in support of the Project include:

Senators Joe Biden and Tom Carper, and US Representative Michael Castle **in support of the Project in the context of the certain federal tax credit applications (see**

- Figure 1-10).

- **James Wolfe, President & CEO of the Delaware Sate Chamber of Commerce,** representing nearly 2,800 member companies employing almost 155,000 people in Delaware (see Figure 1-11).

- [redacted] expressing support of the Project and ongoing interest in securing up to 200 MW of long-term supply from the Project. [redacted] territory covers approximately 80% of the Delmarva Peninsula (see Figure 1-12).

- **State Representatives John Atkins, Joseph Booth and Gerald Hocker** in support of the Project's numerous benefits to Delaware endorsing approval of NRG's Project by the Sate agencies (see **Error! Reference source not found.**).

- **President of the Delaware State AFL-CIO, Samuel Lathan** representing over 28,000 men and women members in support of NRG's Project in Millsboro, DE (see Figure 1-14).

- **Business Manager of the IBEW, Douglas Drummond** in support of NRG's $ 1 billion + clean coal Project (see Figure 1-15).

- **Sussex County Engineer, Michael Izzo,** expressing strong interest in working with NRG to solve the region's recycled water disposal challenges. The NRG IGCC Project intends to utilize 100% recycled water for its process needs (see Figure 1-16).

Figure 1-10 Letter of Support: Sen. Joe Biden, Sen. Tom Carper, and Rep. Mike Castle

Congress of the United States
Washington, DC 20510

June 28, 2006

Melissa Robe
National Energy Technology Laboratory
U.S. Department of Energy
3610 Collins Ferry Road
Morgantown, WV 26507

Dear Ms. Robe,

This letter is being written in support of the NRG submittal to the U.S. Department of Energy (DOE) regarding the IRS Section 48A tax credits for the proposed Indian River IGCC Repowering Project in Millsboro, Delaware.

As you may know, part of the application to the DOE is to note how the facility conforms to public policy. Having reviewed the NRG development plans, we believe the Indian River IGCC Repowering Project is consistent with the stated goals of the City of Millsboro, Sussex County, and the State of Delaware. As such it is strongly supported by existing and long term public policy. We urge the DOE to approve the application for Section 48A tax credit eligibility.

Specifically, the Indian River site is to be located on an existing energy production facility with large amounts of existing coal and oil fueled electric power generation. Under the new project plans, after repowering, the new Indian River power station will produce more electric power while emitting significantly less pollution in Delaware. This new technology will have better efficiency and increase the site work force compared to the current plant. Finally, during construction, over $1 billion will be invested into the Sussex County, Delaware economy. All of these aspects are clearly consistent with local, state and national public policy in any number of aspects.

We strongly encourage the DOE to approve the application for Section 48B tax credit eligibility. If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Senator Tom Carper

Senator Joe Biden

Congressman Michael Castle

Cc: Mr. Curtis Morgan, President
Northeast Division
NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540

Figure 1-11 Delaware Chamber of Commerce Support Letter

DELAWARE STATE
CHAMBER OF COMMERCE

Alan B. Levin, Chairman
James A. Wolfe, President & CEO

December 11, 2006

Arnetta McRae
Chair, Delaware Public Service Commission
861 Silver Lake Boulevard
Cannon Building, Suite 100
Dover, Delaware 19904

Dear Chair McRae:

I am writing to express the Delaware State Chamber of Commerce's support of NRG Energy's project to develop an Integrated Gasification Combined Cycle (IGCC) power plant at the existing Indian River location in Sussex County. As you are probably aware, the Chamber is the state's largest business organization with nearly 2,800 member companies that employ almost 155,000 people.

The Indian River Plant is one of Sussex County's biggest taxpayers. The introduction of NRG's proposed IGCC, or "clean coal" technology, at the plant would ensure that this valuable tax base and employer remains stable here, while creating approximately 100 permanent jobs and over 1,000 construction jobs.

The Indian River Plant, located near the town of Millsboro, is an ideally located candidate for the State's next electricity plant. Introducing "clean coal" technology would have significant spin-off benefits, both environmental and financial, to a community that needs economic investment. The local annual spend from a facility of this size is in the tens of millions of dollars per year and the Plant's significant use of the rail road helps to keep rail costs down for our local businesses including the farmers.

The Chamber believes the RFP process holds great potential for the Indian River Plant, as well as the surrounding community. We request that NRG's Indian River Plant project receives the support it deserves.

Sincerely,

James A. Wolfe

cc: Commissioner Jeffrey Clark, DPSC
Commissioner Joann Conaway, DPSC
Commissioner Jaymes B. Lester, DPSC
Commissioner Dallas Winslow, DPSC
The Hon. Jennifer Davis, State Budget Office
Mr. Russell T. Larson, Comptroller
Mr. Phillip J. Cherry, Governor's Office
Ms. Lee Ann Walling, DEDO

1201 N. Orange Street, Suite 200, P.O. Box 671, Wilmington, Delaware 19899-0671 • (302) 655-7221
Kent and Sussex (800) 292-9507 • Fax (302) 654-0691
www.dscc.com

Figure 1-12 [redacted] Support Letter

[redacted]

December 14, 2006

[redacted]

NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540

[redacted]

Over the past several months, we have studied NRG's development plans for this project and appreciate the level of detailed information that you have provided to us. Having reviewed the engineering and cost information that you have provided [redacted] has an interest in potentially participating in the Indian River IGCC project. This may take the form of an equity ownership share of the project, a long-term purchase agreement or some combination of the two. Our current studies indicate that participation in an amount ranging from 75 MW to 200 MW of the project could fit our needs well. [redacted]

I understand that you plan on participating in Delmarva Power & Light's long-term request for power supply proposals by submitting a bid for up to 400 MW of generation from the Indian River IGCC plant. [redacted] commends your participation in this process and hopes that your proposal will be successful. At this point, it would seem that our interest in the project can be satisfied out of the remaining 200 MW of generation and that your successful participation in the Delmarva RFP would greatly enhance the project's prospects.

[redacted]

[redacted]

Sincerely,

[redacted]

Figure 1-13 Letter of Support: State Representatives John Atkins, Joseph Booth and Gerald Hocker

December 15, 2006

Arnetta McRae, Chairwoman
Public Service Commission
861 Silver Lake Blvd.
Cannon Bldg.
Suite 100
Dover, Delaware 19904

Dear Chairwoman McRae:

We are writing today in support of NRG Energy's proposal to develop a new Integrated Gasification Combined Cycle (IGCC) generation facility at its Indian River site near Millsboro. This project is unique among the various projects that have been submitted as it is the only one that meets all of the criteria established in House Bill 6 (the Electric Utility Retail Customer Supply Act of 2006 or EURCSA), the enabling legislation for the current RFP process.

The EURCSA establishes 7 requirements for projects to be considered in the current RFP process:

- Utilize new and innovative technologies (coal gasification)
- Provide environmental benefits to the state
- Utilize existing fuel and transmission infrastructure
- Utilize existing brownfield or industrial sites
- Promote fuel diversity
- Support or improve reliability
- Resources that encourage price stability

NRG's proposed project meets these seven requirements and additionally would create a huge economic development opportunity for Delaware. This project, estimated at well over $1 Billion, would create over 1000 construction jobs and 100 new, well-paying positions at the Indian River facility. Additionally, this project essentially guarantees that NRG will continue to make use of the rail road system, and in so doing, keeps rail costs down for our agricultural businesses. Indeed, this project is unique and its benefits extend far beyond the parochial interests of NRG and Millsboro.

Finally, we are pleased that NRG has taken the additional initiative to include a plan to address greenhouse gas emissions. By choosing NRG's IGCC proposal, we have the potential to set the national standard for new, cost effective generation that reduces carbon emissions. We believe that a carbon capture and sequestration plan should be included in the ultimate project that is approved and we are pleased that NRG is including such a plan in its bid.

For the reasons discussed above, we endorse NRG's IGCC plan and strongly urge the Commission to approve this proposal. Feel free to contact us if you have any questions.

Sincerely,

Representative John C. Atkins
41st District

Representative Joseph W. Booth
37th District

Representative Gerald W. Hocker
38th District

cc: Phil Cherry, Delaware Energy Office
Russ Larson, Controller General's Office
J.J. Davis, Office of Management and Budget

Figure 1-14 AFL-CIO Letter of Support

SAMUEL E. LATHEM, *President* | TIMOTHY SHELDON, *Vice President* | E. JACKIE CANADA-REAVES, *Secretary-Treasurer* | GERALD L. BRADY, *Executive Director*

DELAWARE STATE AFL-CIO

698 Old Baltimore Pike • Newark, Delaware 19702 • Phone (302) 283-1330
Fax (302) 283-1335
Email de.aflcio@comcast.net
Web www.deaflcio.com

December 13, 2006

Arnetta McRae
Chair, Delaware Public Service Commission
861 Silver Lake Boulevard
Cannon Building, Suite 100
Dover, Delaware 19904

Dear Chair McRae:

I am writing as the President of the Delaware State AFL-CIO to express our interest in the current RFP process to build new electric generation in Delaware. Specifically, we support NRG's project to develop a new "clean coal" plant at the Indian River facility in Sussex County.

Over the past several months, we have heard a great deal about the proposed development at the Indian River Plant. At the press conference announcing this project in June, both the economic and environmental benefits of this project were discussed. We believe this $1 Billion-plus project and the 1000 construction jobs it will create are critical to the Millsboro area and the surrounding communities. This includes some of the 28,000 men and women I represent.

We are very excited about the possibilities for our community in the way of increased jobs at Indian River, construction jobs created by the project and a cleaner coal burning facility. We strongly support this project and urge you and others involved in the review and award under the RFP process to make the NRG project a reality through an award to NRG.

Sincerely,

Samuel E. Lathem
President
Delaware State AFL-CIO

cc: Commissioner Jeffrey Clark
Commissioner Joann Conaway
Commissioner Jaymes B. Lester
Commissioner Dallas Winslow
The Honorable Jennifer Davis
Russell T. Larson
Philip J. Cherry
Lee Ann Walling

Figure 1-15 IBEW Letter of Support

International of Electrical Brotherhood Workers

LOCAL UNION No. 313—A.F.L.-C.I.O.-C.L.C.

814 WEST BASIN ROAD NEW CASTLE, DELAWARE 19720

DOUGLAS K. DRUMMOND
Business Manager

PHONE (302) 328-0773
FAX (302) 322-5083
www.ibew313.org

DONALD M. KING
President

December 11, 2006

Anetta McRae
Chair, Delaware Public Service Commission
861 Silver Lake Boulevard
Cannon Building, Suite 100
Dover, Delaware 19904

Dear Chair McRae:

I am writing as the Business Manager of the International Brotherhood of Electrical Workers Local 313, to express our interest in the current RFP process to build new electric generation in Delaware. Specifically, we support NRG's project to develop a new "clean coal" plant at the Indian River facility in Sussex County.

Over the past several months, we have heard a great deal about the proposed development at the Indian River Plant. At the press conference announcing this project in June, both the economic and environmental benefits of this project were discussed. We believe this $1 Billion-plus project and the 1000 construction jobs it will create are critical to the Millsboro area and the surrounding communities. This includes some of the IBEW journeymen and women I represent.

We are very excited about the possibilities for our community in the way of increased jobs at Indian River, construction jobs created by the project and a cleaner coal burning facility. We strongly support this project and urge you and others involved in the review and award under the RFP process to make the NRG project a reality through an award to NRG.

Sincerely,

Douglas K. Drummond
Business Manager
Local Union 313, I.B.E.W.

DKD:hce
OPEIU#32
AFL-CIO

cc: Commissioner Jeffrey Clark
Commissioner Joann Conaway
Commissioner Jaymes B. Lester
Commissioner Dallas Winslow
The Honorable Jennifer Davis
Russell T. Larson
Philip J. Cherry
Lee Ann Walling

Figure 1-16 Sussex County Letter of Support

Sussex County
Engineering Department

MICHAEL A. IZZO, P.E.
County Engineer

RUSSELL W. ARCHUT
Assistant County Engineer

2 THE CIRCLE
P.O. BOX 589
GEORGETOWN, DELAWARE 19947

Administration	302-855-7718
Planning & Permits	302-855-7719
Public Works	302-855-7703
Utility Construction	302-855-7717
Operations & Maintenance	302-855-7730

Fax: 302-855-7799

December 7, 2006

NRG Energy, Inc.
Indian River Generating Station
PO Box 408
Power Plant Road
Millsboro, DE 19966

Attn: Gerry Hopper
Director of Regional Affairs

Re: Potential for Use of PNRWF Treated Effluent at NRG Energy
FILE # DFPA 5.05

Dear Mr. Hopper,

After meeting with you on August 23, 2006, Sussex County has had further thoughts regarding the planned expansion of the NRG Energy's Indian River Generating Station and a possible cooperative effort our Piney Neck Regional Wastewater Facilities (PNRWF). At the meeting, you mentioned that NRG Energy may have interest in obtaining treated effluent water for use as cooling water, boiler makeup water, and other industrial water use purposes. At this time, the County produces about 120,000 gpd of treated effluent water from the PNRWF, but we expect the amount of treated effluent water to increase dramatically in the coming years. In order to expand the capacity of our treatment facility, we intend to modify the treatment process and will produce a higher quality effluent. Currently, the County disposes of treated effluent via land application, but has strong interest in providing some or all of this water to NRG as an alternative or supplement to expanding our spray irrigation system. To evaluate this possibility fully, it would be helpful if you could provide the following information to us for planning purposes:

- The raw water characteristics (such as pH, BOD5, TSS, TDS, residual chlorine, etc.) required for each process that you would consider using treated effluent as the water supply source. We understand that you are using a combination of Indian River water and groundwater for these uses now, so if you could provide us the typical characteristics of your existing water source (assuming this meets your future needs) - this also would be helpful.
- The quantity of treated effluent that you could accept for each type of process under consideration. We understand that you have also been speaking to the Town of Millsboro about using treated effluent from their new wastewater facility to provide a portion of this water, so we would be interested in knowing your water needs with and without consideration of accepting treated effluent from Millsboro.

The information above will help us in the treatment process selection and effluent disposal facilities planning for the expansion of the PNRWF. Once we have more definite planning numbers for the quantity and quality of treated effluent we expect to produce at the PNRWF, we will share this information with you.

In a related subject, the County would also be interested in leasing or purchasing agricultural or other non-wetlands properties from NRG Energy for the purpose of spray irrigation of treated effluent. Please let us know if there are any such properties (especially those in vicinity to the PNRWF), which you would consider for this purpose. We understand that no decisions on this issue can be forthcoming until NRG Energy has finalized its expansion plans.

If you should have any questions regarding these issues, please contact me at your convenience at 855-7718.

Sincerely,

SUSSEX COUNTY ENGINEERING DEPARTMENT

Michael A. Izzo, P.E.
County Engineer

MAI:mi

cc: Mr. Thor Young, P.E.
Mr. Russell W. Archut
Mr. John Ashman
Ms. Heather Sheridan

1.11 Financing and Ownership Structure

Construction of the Indian River IGCC Project will be funded by a blend of cash equity and project financed debt. [redacted]

Although NRG has sufficient capital resources to fund all the equity itself, [redacted]. NRG is already in discussions with interested parties with respect to additional offtake and/or sale of an undivided interest in the excess project capacity not already contracted with Delmarva.

NRG has reviewed the Indian River IGCC Project with key lending institutions such as [redacted] Preliminary indications of financeability and support from these firms are included in this application in Section 9. In short, the lending community is highly supportive of the Project based on NRG's sponsorship and the existence of a long-term PPA, subject to the usual and customary terms for project financing. Based on extensive analysis and third party inputs, as part of our comprehensive development process to date, NRG is highly confident in the economic viability and financeability of the Indian River IGCC Project, [redacted]

NRG is currently assuming a seven-year construction loan that would be refinanced after the commercial operation date with long-term project debt. Discussions with potential lead arrangers confirm the availability of post-construction term loans [redacted]

1.12 Project Status

NRG selected its existing Indian River plant as the ideal candidate site for an IGCC project in early 2005. Since then, NRG has expended significant funds and internal man-hours in developing the Indian River IGCC Project. NRG also retained highly experienced technology, engineering, environmental and geological consulting firms, such as [redacted] to support this effort. Over the past 18 months, NRG has completed a comprehensive preliminary technical, environmental, geological, financial, regulatory, commercial, and community assessment as part of its deliberate and staged development of the Indian River IGCC Project.

Key results from these preliminary development activities include [redacted] IGCC design basis, the identification of several vendors as potential EPC contractors, preliminary engineering reports containing detailed estimates for capital cost, power output, heat rate, carbon capture and sequestration and emissions, as well as an environmental overview consisting of a permit roadmap and preliminary agency discussions. A detailed risk assessment was also prepared that includes a compilation of key lessons learned from prior IGCC projects worldwide that will be incorporated into NRG's design and execution plans going forward.

NRG has engaged permitting consultants and has begun the permitting process. The permitting process is expected to take up to 18 months to complete. In addition, PJM has completed its initial Interconnection Feasibility Study with very favorable results. NRG has also filed the subsequent System Impact Study agreement with PJM [redacted]

[redacted]

1.13 NRG Energy

Company Overview

Organized in 1989, NRG is the leading competitive power generation company in its sector with a portfolio of over 24,500 MW. NRG's generating fleet is distinguished by its range in geography, fuel sources, and dispatch levels. NRG has projects in the Northeast, South Central, Texas and Western regions of the United States. It also has projects in Australia, Germany and Brazil. The company's projects use a wide array of fuels including wind, natural gas, oil, coal and nuclear fuels across a balanced portfolio of baseload, intermediate and peaking units. NRG also owns a wind development company which is actively pursuing wind generation projects in our core regions. NRG provides reliable wholesale electricity safely, affordably and consistent with its environmental commitment to the communities it serves.

Located in Princeton, New Jersey, NRG has a strong presence in the Northeast US. Its Northeastern fleet represents a total of just over 7,000 MW of generation, with 840 MW (~12%) of regional capacity located in Delaware. Of the current Northeast portfolio, 29% is fueled by coal, 50% by oil and 21% by natural gas. NRG seeks to have a greater percentage of coal-based power in its Northeast fuel mix to underpin fuel diversity – in turn fostering electric reliability and price stability – while providing cost-effective generation based on a fuel type with which NRG is intimately familiar and skilled.

NRG is a non-hierarchical, flat, fast-moving organization. All headquarters staff work in an open layout designed to foster collaboration and promote informed decision-making. By integrating plant operations, commercial risk, management of fuel supply and power sales, and the development of new facilities, NRG strives to operate in a safe, environmentally clean and low-cost manner. Through this integrated approach, NRG is positioned to reduce risk involved with fuel procurement, power production, and operating cash-flows while operating its fleet safely and efficiently. NRG's commodity risk management concentrates on the long-term to provide consistent and reliable cost and return profiles respectively to its customers and investors.

Managing Execution Risk

Successfully developing, constructing and operating a billion dollar state-of-the-art clean-coal project requires a company and a project team with the highest standards of integrity, experience and excellence. Delmarva and Delaware deserve no less than the best the market has to offer and NRG believes that it is the right company, with the right offering, at the right time for Delaware.

NRG has developed and acquired thousands of megawatts of power projects over the last decade for which it has mobilized financing, and can do so again for the Indian River IGCC Project. NRG, as one of the leading generators in its sector, attracts significant attention and investment from Wall Street. Earlier this year, NRG acquired Texas Genco (now NRG Texas) for $5.8 billion. This transaction added approximately 10,000 MW to NRG's portfolio in a move widely seen to bring together two extremely complementary businesses to produce greater overall value. NRG is also in late-stage development of an additional solid fuel unit at its Big Cajun II power plant: a billion dollar project that will add 700 MW of new generation in Louisiana.

NRG has an unrelenting focus on execution and prudent balance sheet management. Our strong financial and operational performance has allowed NRG to pursue responsible financial growth

opportunities that will enhance our portfolio of assets. In 2005, NRG introduced *FOR*NRG (Focus On Return on Invested Capital NRG) as a way for all of NRG's staff to contribute to NRG's growth. Through the optimization of existing assets, the program has a goal of adding $200 million per year to the company's bottom line by year-end 2009 and has exceeded all targets to date. As part of corporate development and growth, NRG is constantly evaluating brownfield and greenfield developments, acquisitions and other attractive and fiscally responsible investment opportunities.

NRG and Delaware

NRG's commitment to the State of Delaware traces back to 2001 when NRG invested over half a billion dollars for interests in five generating stations in the Mid-Atlantic – including the four Indian River fossil-fired power generating units - making NRG one of the top investors within the State. NRG's ongoing commitment to Delaware is evidenced by:

- Over 840 MW of net generating capacity;
- Over 150 employees dedicated to safely and economically generating power;
- Initiative to convert its coal-fired plants to Wyoming's Powder River Basin ("PRB") low-sulfur coal, dramatically improving environmental performance; and
- Total projected capital spending through 2012 well in excess of one billion dollars, both for the Indian River IGCC Project as well as estimated reinvestment in its existing facilities.

In addition to managing its current assets, NRG is actively looking towards the future. NRG has a team of development experts focused on building a portfolio of assets across the Northeast that will meet market needs while reducing environmental footprint. Areas of focus for NRG's Northeast development efforts include:

- Application of innovative baseload IGCC technology;
- Participation with GreenFuel Technologies Corporation to develop alternative forms of CO_2 capture from conventional fossil-fueled power plants;
- Biomass based power generation;
- Potential ethanol development using co-generation with new or existing power plants;
- Development of state-of-the art gas fired peaking facilities;
- Repowering of older coal units with atmospheric arc-furnace gasifiers; and
- Development of wind power projects.

As reflected in NRG's current activities, a focus on sustainable and clean power production is central to our development efforts in Delaware and the greater Northeast.

NRG and PJM

NRG has been safely operating power plants within the PJM area since before the inception of that market. NRG remains focused on safe and reliable operations. Our employees' diligence has significantly lowered unit forced outage rates while increasing our safety record. NRG is proud to provide reliable service to the PJM ISO and a safe work environment for our employees. NRG facilities located in PJM are listed in Table 1-6.

Table 1-6 NRG Plants in PJM

	Location	Net MW Owned	Fuel
Conemaugh	New Florence, PA	64	Coal/Oil
Indian River	Millsboro, DE	737	Coal/Oil
Keystone	Shelocta, PA	63	Coal/Oil
Vienna	Vienna, MD	170	Oil
Dover Energy	Dover, DE	104	Coal/Natural Gas
Total	**5 Locations**	**1,138**	

NRG is an active market participant and a full member of the PJM Interconnection, LLC. NRG routinely participates in PJM committees and working groups to advocate and negotiate a transparent and fair market structure, as well as to ensure reliable system operations. NRG regularly votes at all meetings regarding recommendation of rule changes, tariff language, reserve margins requirements, budgets, etc.

The primary PJM committees that NRG focuses on are listed below.

Members Committee ("MC") – The MC is attended by all members, executive PJM representatives as well as the PJM Board. The MC reviews and decides upon all major changes and initiatives proposed by lower level committees and user groups.

Markets Reliability Committee ("MRC") - is responsible for ensuring the continuing viability and fairness of the PJM markets. The MRC is also responsible for ensuring reliable operation and planning of the PJM system. The MRC works closely with, provides direction to and reviews recommendations from the MIC, PC and OC.

Markets Implementations Committee ("MIC") – Originally created as a working committee, the MIC has evolved into a "think tank" committee for proposals and analysis of existing and potential market structures. The MIC initiates and develops proposals to advance and promote competitive wholesale electricity markets in the PJM region for consideration by the Members Committee.

Operating Committee ("OC") - The OC votes on motions brought by the working groups that focus on system operational issues. The OC reviews system operations from season to season, identifying emerging demand, supply and operating issues.

Planning Committee ("PC") - The PC provides direction on system reliability, security, planning strategies, economy of service. The PC provides system planning strategies and policies as well as engineering designs for the bulk power system. Also inherent in this committee are load forecasting design and installed reserve margin requirements.

Other high level PJM committees in which NRG participates include:

- FC - Finance Committee;
- MMAC – Market Monitoring Advisory Committee;
- TAC – Tariff Advisory Committee; and
- TEAC – Transmission Expansion Advisory Committee.

Coal and Fuel Procurement

NRG has supplied coal and natural gas to its Delaware facilities since energy market deregulation. NRG runs one of the largest coal procurement operations in the US and is committed to the environmentally compliant use of coal as a domestic fuel source. Through its Commercial Operations group, NRG currently purchases approximately 36 million tons of coal per year and is the second largest buyer of low sulfur Powder River Basin coal in the country. NRG manages a fleet of over 6,800 rail coal cars and maintains approximately 97% of its solid fuel transport needs under firm contracts at least two years forward. In September 2006, NRG issued a request for proposals for long-term supply of a broad range of coals for the period 2007 to 2021 that drew offers [redacted]

NRG manages fuel procurement for its 12,209 MW of natural gas-fired generation from within its Commercial Operations group where the company maintains a physical trading desk. This desk purchases approximately 150 billion cubic feet per year of natural gas. [redacted]

NRG is also responsible to supply various grades of petroleum for the 3,500 MW of oil-fired generation. In 2006, NRG's oil desk has sourced and delivered in excess of three million barrels of residual fuel oil and in excess of five million gallons of various distillate fuels. [redacted]

Environment and NRG Carbon Policy

NRG has advocated that the electrical generation sector in the US lead the way on constructive carbon policy and has developed a five-point strategy to aggressively address its carbon profile. The "*Repowering America with NRG*" initiative announced on June 21, 2006, as implemented, will reduce NRG's CO_2 emissions per megawatt-hour of production by 22% while increasing its baseload generating capacity by 42% over the same period.

NRG has been active in advocating its support of a national program to limit greenhouse gas emissions that can be structured to have a minimal affect on electric reliability while achieving significant reductions. The generation sector has a unique opportunity to provide leadership on national carbon policy and ensure that market and commercial realities are part of the environmental policy debate on this issue, including with respect to the:

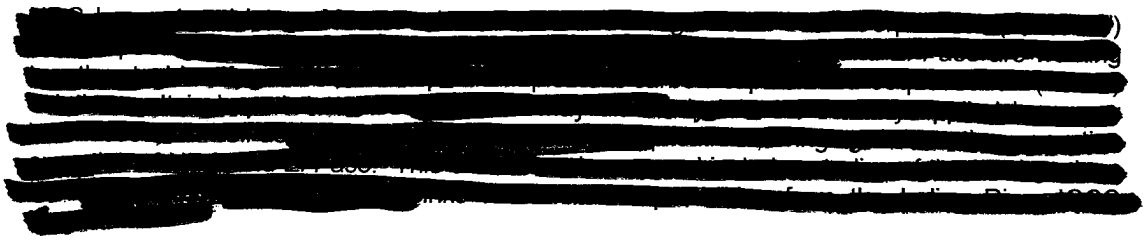
- Lack of current economical technology to retrofit different existing units (i.e., carbon capture from flue gases);
- Lack of near-term scalable new build options; and
- Anticipated impact on gas prices, which in turn drive power prices.

NRG's approach is reflected in the way we do business everyday. NRG strives to reduce its carbon footprint while employing fuels that are plentiful, cost effective and enhance domestic energy security. The five cornerstones of our carbon policy include:

1. **Public outreach**: NRG works with government, industry and public interest groups to formulate and implement a sound carbon policy.
2. **Bridge the technology gap:** NRG is taking steps *now* to make its contribution to a world of reduced carbon emissions.

3. **IGCC clean coal facilities:** NRG is proposing to build IGCC facilities in both New York State and Delaware with "carbon capture ready" options and has plans to do the same in Connecticut once the appropriate baseload RFP is issued.
4. **Wind power**: NRG is employing renewable generation to supplement fossil fuel facilities.
5. **Nuclear generation:** NRG is expanding its existing nuclear operations at the South Texas Project through the development of additional units – to bring to four the number of units at that facility.

NRG's carbon policy is evidenced by efforts that are underway today. Our "*Repowering America with NRG*" initiative will substantially lower NRG's carbon intensity, allowing us to capitalize on a sound business opportunity for the benefit of all our stakeholders, while also significantly benefiting the environment. Over time, as we implement our redevelopment plans – including in Delaware - significant and sustainable carbon reductions are expected to be achieved.



2 Pricing & Commercial Terms

NRG's proposed pricing and key commercial terms for the Indian River IGCC Project are described in this Section. The pricing offered for 400 MW of energy and capacity from the proposed Project represents a true and fair reflection of the cost of innovative baseload generation in today's market. NRG believes this pricing offers Delaware a competitive and affordable long-term hedge against market volatility which, together with all the other benefits of the Project, represents compelling value. In addition, as market pricing changes in the near-term to reflect new and significant costs related to regulations on reduced mercury and carbon emissions, the proposed pricing for the Indian River IGCC Project will be even more attractive in providing dependable, baseload power from the next generation of power production technology for the benefit of all Delawareans.

In addition to offering long-term baseload power from the Project, NRG is also offering [redacted] firm fix-priced baseload "bridge" energy from its existing Indian River facility [redacted] prior to the Indian River IGCC Project entering commercial operation. This bridge is being offered to ensure that Delmarva has the necessary access – in the near term – to capacity and energy to continue to reliably support economic growth in the State, before the needed new generation comes on line.

[redacted]

2.1 Project Pricing

Quantity & Delivery Point

NRG proposes to enter into a long-term [redacted] PPA with Delmarva to deliver 400 MW of innovative baseload, carbon capture ready capacity and energy from its 600 MW Indian River IGCC Project. Delmarva's pro rata share of energy purchase in any given payment period will be 400/600 (or 66.67%) of the total actual energy production from the new plant. Energy will be delivered to Delmarva at its existing 230kV Indian River substation.

[redacted]

Turndown [redacted]

Responsive to Delmarva's concerns about limited Standard Offer Service ("SOS") load requirements at certain times, NRG has specifically structured its offer to incorporate an effective turndown ability for Delmarva, [redacted]

[redacted]

Carbon Capture Option

NRG is offering Delmarva the option to have the carbon capture equipment installed as part of the initial Project build, ready for commercial operation [redacted] or to install such equipment at some future date – selected by Delmarva. Installation of carbon capture equipment on an IGCC facility can be done effectively and without compromising the integrity of the plant post-initial construction.

Pricing for installing the carbon capture equipment as part of the initial Project build is included in Table 1-3. NRG's pricing for carbon capture equipment shown below [redacted]

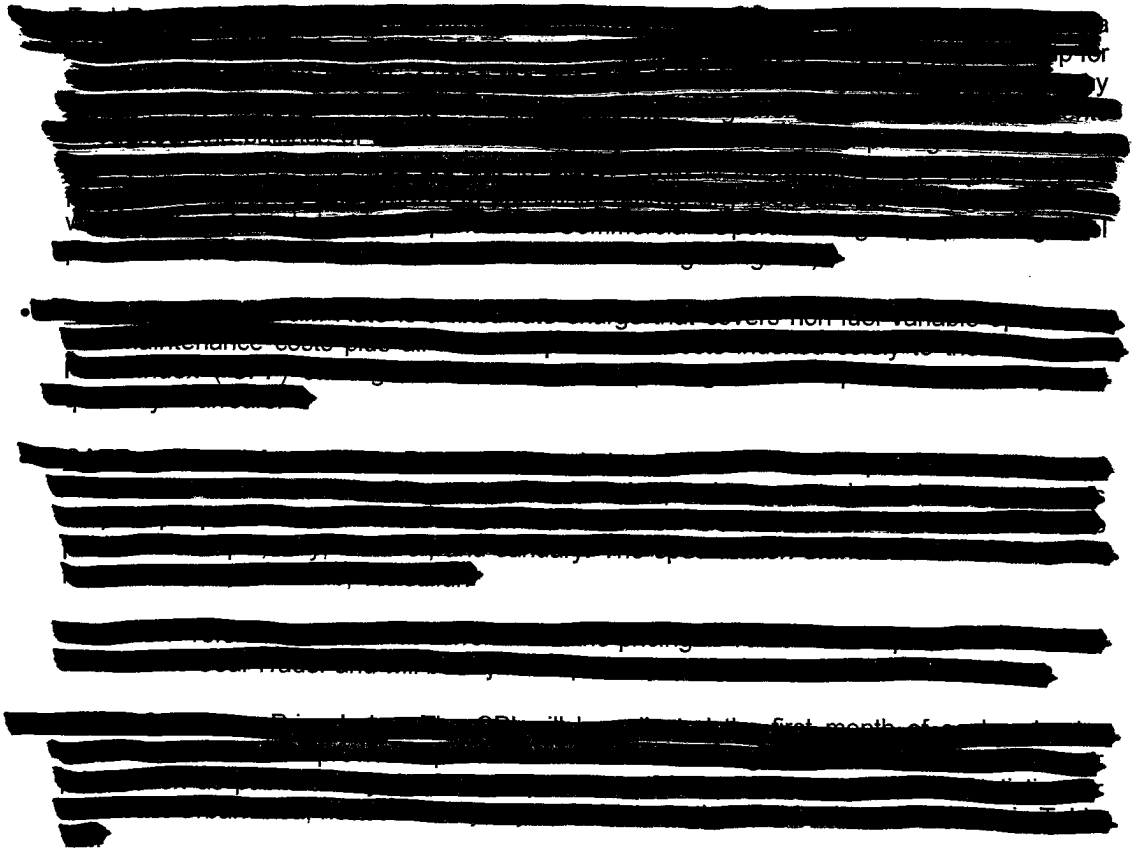


Table 2-1 Consumer Price Index – Northeast

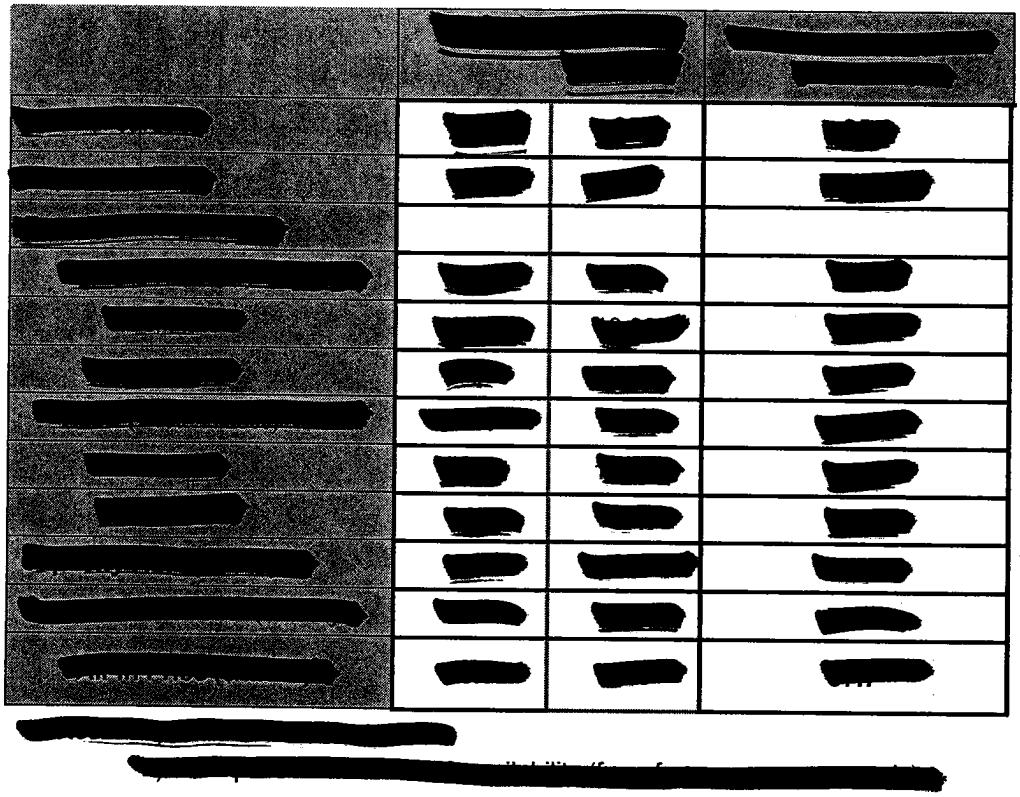
	161.4	162.2	162.8	162.9	163.0	163.1	163.4	164.0	164.6	165.1	165.4	165.7	163.6	162.6	164.7
	166.2	166.9	167.3	167.1	166.8	167.0	167.6	167.8	168.4	168.7	168.5	168.4	167.6	166.9	168.2
	168.8	169.1	169.3	169.5	169.4	169.6	169.9	170.5	170.6	171.3	171.2	171.2	170.0	169.3	170.8
	171.4	171.6	171.9	172.8	172.8	173.1	173.4	174.1	174.8	175.5	175.5	175.5	173.5	172.3	174.8
	176.2	177.6	178.5	178.5	178.4	179.0	179.8	179.9	180.7	181.2	181.5	181.3	179.4	178.0	180.7
	182.2	182.8	183.7	184.2	184.6	185.3	185.0	185.1	185.1	185.0	185.0	184.2	184.4	183.8	184.9
	184.9	186.1	187.0	187.8	187.7	187.8	188.3	189.3	189.5	189.9	190.1	189.6	188.2	186.9	189.5
	190.5	191.7	193.0	192.6	192.7	192.8	193.5	194.3	195.0	195.4	195.1	194.9	193.5	192.2	194.7
	195.9	196.8	198.6	199.4	199.9	201.1	201.0	201.0	201.2	202.5	202.6	201.9	200.2	198.6	201.7
	202.6	203.6	206.0	206.9	206.2	206.2	207.9	208.7	210.8	211.5	210.0	209.0	207.5	205.3	209.7
	211.0	211.6	212.8	214.7	215.7	216.7	217.5	218.1	216.3	215.2				213.8	

Series Id: CUUR0100SA0 **Source - www.bls.gov** **CPI - 217.3 - 3rd quarter 2006 average**
Not Seasonally Adjusted
Area: Northeast urban
Item: All items
Base Period: 1982-84=100

- Renewable Energy Credit ("REC") Rate: Any REC produced by the Indian River IGCC Project resulting from the use of qualifying biomass fuel

[redacted]

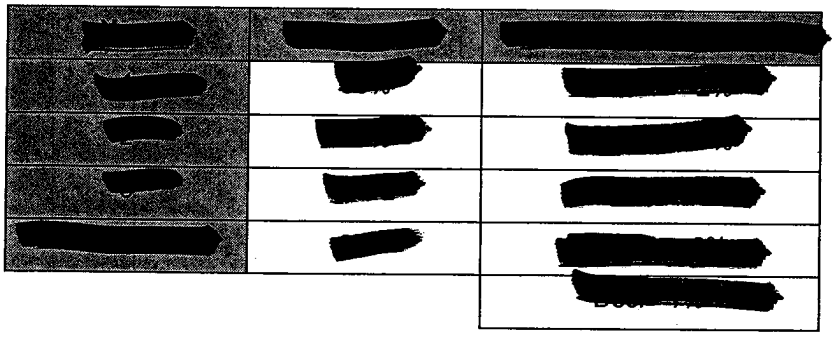
Table 2-2 Proposed Project Pricing For Energy and Capacity



Target Equivalent Availability Factors ("TEAF")

[redacted]

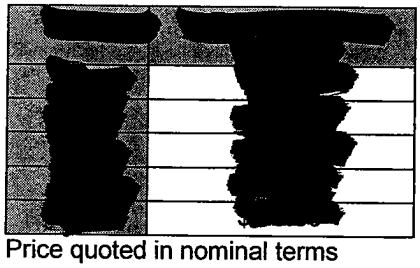
Table 2-3 Target Annual Equivalent Availability and Seasonal Adjustment Factors



2.2 "Baseload Bridge to IGCC" Energy Pricing

As additional value that NRG is able to deliver to Delmarva, given the need for near-term generation in the State, and further to the proposed pricing for the Indian River IGCC Project, NRG is offering a "baseload bridge to IGCC" energy product to Delmarva. NRG proposes entering into an optional agreement with Delmarva t[redacted] firm round-the-clock baseload energy delivered into the Delmarva Zone from NRG's existing Indian River station. [redacted]

Table 2-4 Price Schedule For 280 MW Firm Baseload Energy From Indian River



Price quoted in nominal terms

2.3 Power Purchase Agreement

NRG has carefully reviewed the draft PPA released by Delmarva on November 22, 2006. A redline markup of the draft PPA is included as Appendix A to this proposal. The commentary below is intended to address certain concerns related to the PPA and explain the rationale behind some of the key changes in the attached redline in order to assist the reviewer in better understanding the reasons for the proposed amendments.

[redacted]

Pages 43-44 have been redacted in their entirety.

3 Technical

3.1 Technology Selection

Clean Coal Technology Assessment

In 2005, NRG began assessing which technologies to pursue as part of its comprehensive plan to repower older units and/or add new generation to its fleet. NRG determined that coal-based generation would be the best long-term solution wherever baseload generation was needed. This is because coal generation would offer lower cost power than a natural gas plant, and would offer an attractive long-term hedge against rising gas prices and volatility. As part of an 18-month initial development effort, NRG's clean-coal technology selection process included the evaluation of Circulating Fluidized Bed ("CFB"), Supercritical Pulverized Coal ("SCPC"), Oxycombustion and IGCC technologies. These clean-coal technologies were evaluated against numerous criteria including feasibility, reliability, environmental, cost, carbon capture, performance and permitability in the Northeast/Mid-Atlantic. A comparison of these technologies is summarized in Table 3-1 below.

NRG selected IGCC because it best represents the next generation of innovative solid-fuel plants that can truly claim the "clean coal" label. IGCC has overall environmental performance approaching that of natural gas and the lowest carbon capture cost of any other fossil fuel based technology.

Table 3-1 Comparison of Clean Coal Technologies

	CFB	SCPC	Oxycombustion	IGCC
Ability to Implement	Commercially operational today	Commercially operational today	Not commercially available until 2020	Commercially operational today
Environmental Positives	NOx with SNCR SOx with control Hg with baghouse	NOx with SCR SOx with control Hg with FGD and baghouse	No commercially proven operating unit(s)	NOx with SCR SOx, Hg, CO_2 and PM – pre combustion removal Water usage Low solid waste
Environmental Negatives	CO_2 Water usage High solid waste	CO_2 Water usage High solid waste	No commercially proven operating unit(s)	None
Carbon Capture Cost ($/ton)	[redacted]	[redacted]	[redacted]	[redacted]
Heat Rate (Btu/kWh)	[redacted]	[redacted]	[redacted]	[redacted]
Expected Size	[redacted]	[redacted]	[redacted]	[redacted]
Permitability in Northeast/Mid-Atlantic	[redacted]	[redacted]	[redacted]	[redacted]

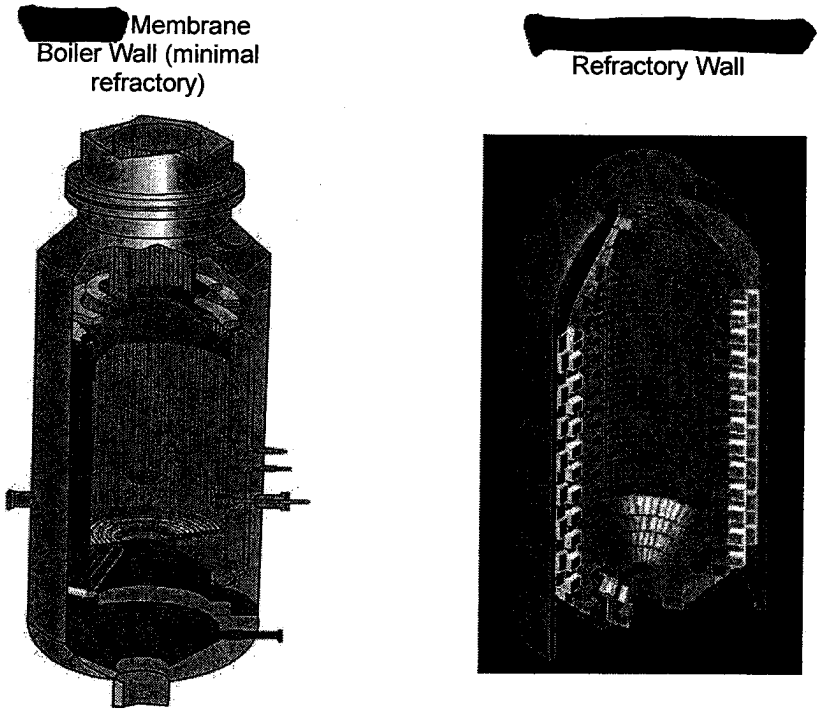
Gasification Technology Selection

After selecting IGCC as its preferred clean-coal baseload technology, NRG proceeded to assess the relative merits of commercially available gasification designs. NRG has reviewed the gasification technologies [redacted]
While all four are "entrained flow" type gasifiers, they fall into two distinct design categories: refractory-lined reactors with water slurry fuel feed, and membrane (boiler) wall reactors with dry fuel feed. [redacted] utilize refractory lined gasifiers, while [redacted] employ the membrane wall technology. This is a key difference with important distinctions. An example of each is illustrated below in Figure 3-1.

In each case, as fuel is fed into the gasifier, the gasifier operates at temperatures high enough to melt the ash content of the solid fuel. The molten ash flows down the reactor walls into a water bath before being discharged from the gasifier. In the water bath, all components of the molten ash, including any heavy metals, solidify into a glassy vitreous solid called "slag". Slag has properties similar to a sand or gravel aggregate and is thus favored for use in paving and other projects requiring filler materials.

Although somewhat less expensive to construct, the refractory intensive gasifier [redacted] requires more frequent maintenance to repair and replace the refractory. Refractory lined gasifiers typically require annual outages of 30 - 40 days to inspect and repair the refractory lining. This raises O&M costs and increases planned outages. Refractory walled gasifiers also use a water slurry fuel feed which results in lower overall efficiency and higher fuel and water use. Fuel costs may also be higher because the slurry feed limits the ability to use lower cost, lower grade coals.

Figure 3-1 Membrane vs. Refractory Wall Gasifiers



In the entrained membrane wall gasifier, [redacted] dry pulverized coal and oxygen are blown into the lower end reactor chamber. The water-cooled membrane operates at a much lower wall temperature and does not erode like the heavy walled refractory design [redacted] The membrane wall is cooled by boiler water, which produces a significant amount of steam, not unlike a conventional boiler. This results in a more reliable system with less maintenance. There is also more control over the slag temperature which reduces the buildup of corrosive slag in the bottom of the gasifier. The dry feed also provides greater control over the gasifier temperature. With dry feed, less energy is required to vaporize the water in the fuel and to gasify the fuel. This reduces oxygen demand and allows for a smaller and less costly ASU. Dry feed also results in a greater percentage of the coal feedstock being converted into useful syngas. [redacted] The features and characteristics all four designs are summarized below in Table 3-2.

Table 3-2 Features & Performance of Leading Gasification Technologies

	[redacted]	[redacted]	[redacted]	[redacted]
Feed	Water slurry	Water slurry	Dry/blown	Dry/blown
Type	Entrained	Entrained	Entrained	Entrained
Number of Stages	1	2	1	2
Oxygen Supply	ASU 95% Oxygen	ASU 95% Oxygen	ASU 95% Oxygen	Air Blown (small ASU)
Reactor Wall	Refractory	Refractory	Membrane Boiler Tube	Membrane Boiler Tube
Reactor Shape	Cylindrical	Cylindrical	Cylindrical	Rectangular
Injector Location & Quantity	Top (1)	Bottom (2) 2nd Stage (1)	Bottom (4)	Bottom (4)
Syngas Cooling	Radiant/Water Quench	2nd Stage Feed/ convective Cooler	Convective Cooler	Convective Cooler
Normal Operating Pressure (PSIG)	400-1,250 psi	650 psi	650 psi	550 psi
Normal Operating Temperature (F)	2,500° F	2,500° F	3,000° F	2,500° F
Gas Flow	Down	Up	Up	Up
Fuel Flexibility	Lower	Medium	High	High
Efficiency	Lower	Medium	High	Highest
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

In order to proceed with preliminary design of the Indian River IGCC Project, [redacted]

The advantages of the membrane tube wall gasifier design [redacted] are summarized below:

- **Operating Efficiency:** Membrane wall gasifiers operate at a higher efficiency compared to other gasification systems. This translates into lower fuel use.

- **Fuel Diversity and Flexibility:** The membrane wall design is able to fire a wider range of fuels when compared to refractory gasifiers. It can effectively utilize lower cost, high-ash content coal (e.g. unwashed, eastern bituminous fuels) as well as high-moisture fuels (e.g. Powder River Basin, sub-bituminous fuels) that do not work effectively in refractory based designs.

- **Maintenance & Downtime:** The membrane water-walled gasifier has key advantages over a refractory lined gasifier. The refractory lined gasifier requires a significant amount of time to warm up or cool down [redacted] A water-wall design has shorter and less frequent maintenance outages. Refractory lined gasifiers typically require 30 - 40 days per year of down time to inspect and replace damaged refractory. Major refractory replacement is required every one to two years. For the water walled design, inspection times are two weeks every two years and major replacement of internals is not part of normal maintenance.

[redacted]

3.2 IGCC: "Integrated Gasification Combined Cycle" Power Generation

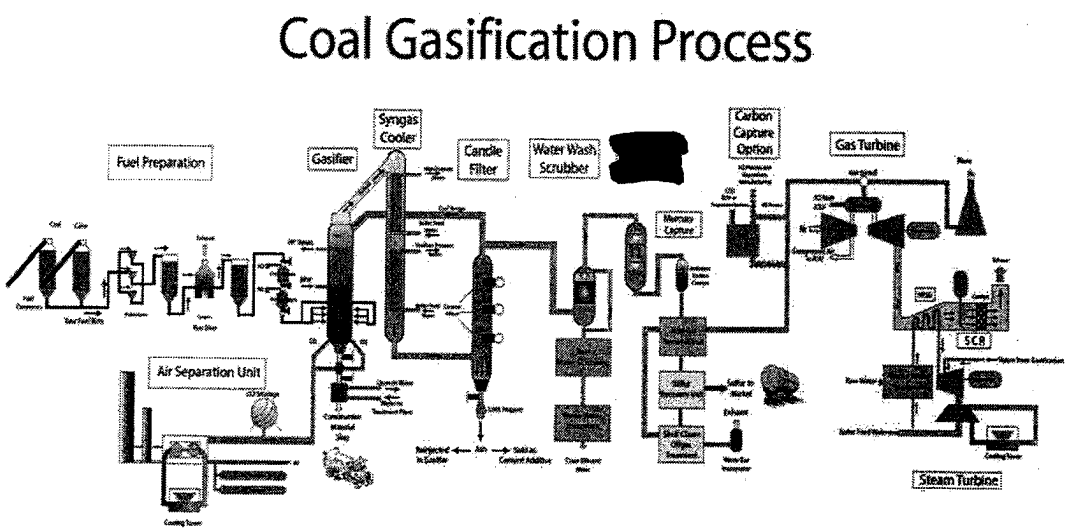
The Gasification Process

Prior to being gasified, the coal is first pulverized and dried using conventional solid fuel preparation equipment. The powdery, dried fuel is then pneumatically injected into the gasifier along with high purity oxygen. Rather than simply "burning" coal, as is done in old generation coal plants, IGCC "gasifies" the feedstock (coal or most any carbonaceous feedstock) into a synthetic gas (or "syngas"). Gasification is another term for partial combustion.

Upon entering the gasifier, the fuel partially combusts and is converted into syngas and molten slag within seconds. The high temperature in the gasifier melts most of the inert ash in the coal. The molten ash, including any heavy metal components, exits the bottom of the gasifier into a water bath and solidifies into a glassy vitreous solid called "slag". A portion of the ash also becomes a fine "fly ash" which is captured and removed. Both the slag and the fly ash have very

low residual carbon content and have unique marketable by-product properties. The syngas is then fully cleaned of sulfur, mercury, and particulates. Finally, the cleaned syngas is used as the primary fuel in a state-of-the-art gas turbine power block. Figure 3-2 shows a simplified IGCC process flow diagram.

Figure 3-2 IGCC Process Diagram



High operating temperatures of 2,500° F to 3,000° F are required to achieve gasification. These temperatures are achieved by injecting high-purity oxygen into the gasification unit. A cryogenic air separation unit ("ASU") generates the required oxygen at a purity of 95%. Some of the air [redacted] from the turbine compressor is extracted for use in the ASU. This integration between the combustion turbine generator ("CTG") and the ASU improves efficiency and net power output. [redacted] standby oxygen and nitrogen will be stored in onsite tanks to ensure overall project reliability.

After gasification, the resulting syngas is composed mainly of carbon monoxide ("CO") and pure hydrogen ("H_2"), and retains approximately 80% of the energy of the original coal. Upon leaving the gasifier, syngas goes through several phases that scrub pollutants [redacted] from the syngas prior to combustion. Once the syngas is scrubbed of pollutants, it is converted to power in the combined cycle (gas and steam turbines) power block.

One benefit of gasification is the ability to efficiently capture pollutants, particulate matter, and CO_2 in a concentrated form prior to combustion. [redacted] These small quantities of ash are then separated out in a cyclone (or ceramic candle filter), leaving the flue gases substantially free of particulates and virtually eliminating opacity and $PM_{2.5}$.

During the next phase, sulfur and mercury is scrubbed from the syngas before being sent to the combustion block. Over 99% of the gaseous sulfides are removed from the scrubbed syngas, and [redacted] these sulfides are converted to elemental sulfur available for beneficial use. Mercury emissions are controlled at 10% of the cost of pulverized coal by using simple sulfide impregnated carbon beds prior to combustion. Over 95% of mercury is removed.

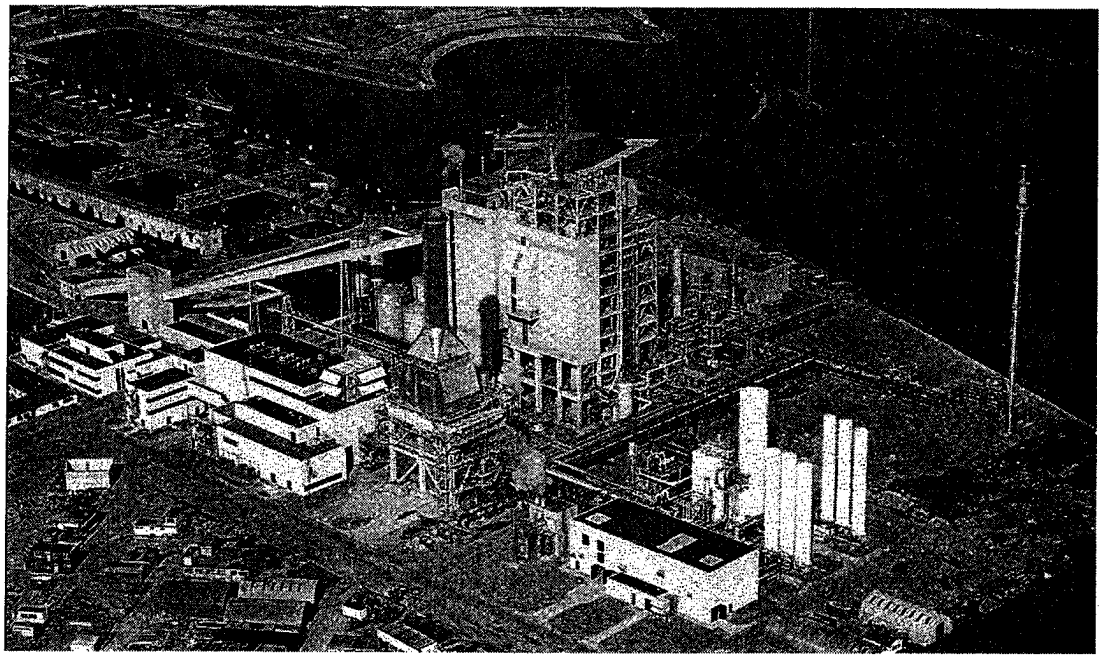
IGCC enables CO_2 to be captured more efficiently and less expensively than any other fossil fuel technology because the CO_2 is highly concentrated in the syngas. Carbon capture in a gasification plant is a proven and well understood process. Carbon is captured by first "shifting" the carbon monoxide within the syngas into carbon dioxide using water (CO plus H_2O into H_2 and CO_2). This highly concentrated volume of CO_2 is then "stripped" out of the syngas using a proven chemical solvent/absorption process. The remaining syngas is converted to power in the combined cycle power block.

The Power Generation Process

The Indian River IGCC Project's power generation block is designed around two [redacted] combustion turbine generators ("CTG"s) equipped for firing syngas (plus oil or natural gas – for start-up and back-up). Energy from each turbine exhaust is converted into steam via a heat recovery steam generator ("HRSG"). Steam from the HRSG and the gasifier produce power through a single steam turbine generator ("STG"). The combustion in the CTGs is partially controlled with nitrogen (diluent) from the ASU, which controls NOx emissions. Additional NOx control is achieved through the use of a selective catalyst reduction ("SCR") treatment of the exhaust gases.

The HRSG is a key component of the IGCC plant that integrates the steam production and steam requirements of multiple processes. The HRSG supplies main and reheat steam to the steam turbine, low pressure steam to the ASU and gasification islands, and integrates steam produced by the gasification island with the steam turbine. Main steam for the steam turbine is produced by superheating a combination of saturated, high pressure steam from the gasification process with the high pressure steam produced in the HRSG. Reheat steam for the steam turbine is produced by superheating intermediate pressure steam with steam returned from the steam turbine.

Figure 3-3 Example Of An IGCC Plant [redacted]

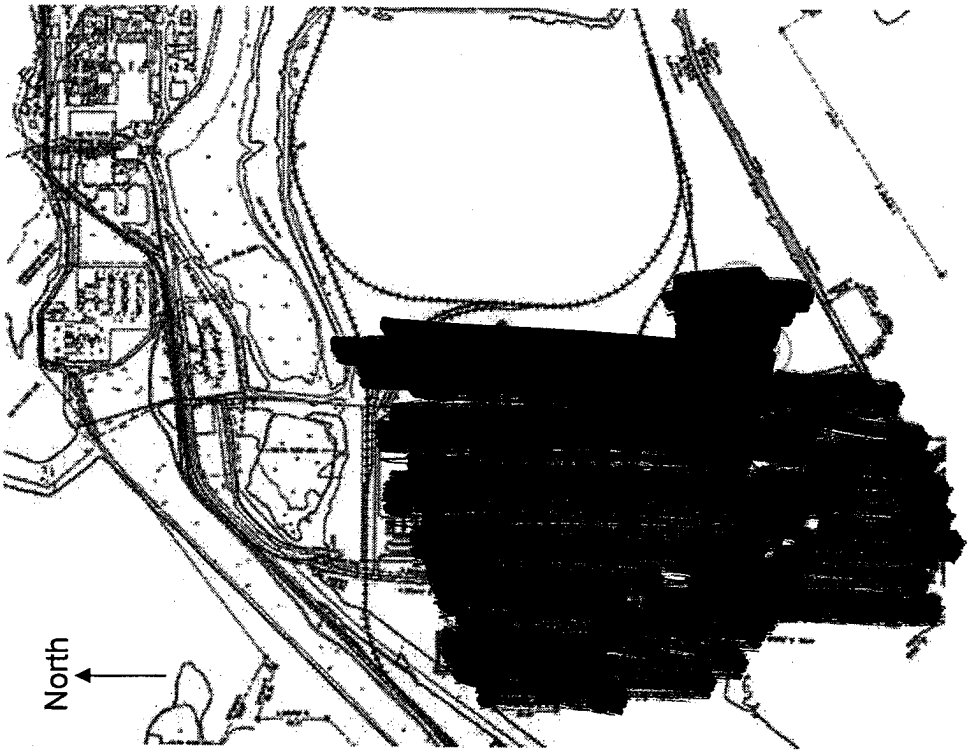


3.3 Plant Description

The Indian River IGCC Project will utilize dual gasifier trains, feeding clean syngas to a power block consisting of two gas turbine generators, two heat recovery steam generators and one steam generator. [redacted] The primary fuel will be an economically efficient blend of lower grade coals augmented opportunistically with petroleum coke and biomass. [redacted]

The Indian River IGCC Project has the potential to capture up to 90+% of the CO_2, limited only by the commercial availability of gas turbines capable of running on nearly pure hydrogen. The proposed design contained in this detailed proposal and response to Delmarva's RFP can capture and sequester [redacted] CO_2, a commercially viable target fully supported by current gas turbine technology.

Figure 3-4 Indian River Site Plan



[redacted] The Indian River site has rail access via the [redacted] In addition to providing fuel delivery, the rail system will also be used to remove the slag, fly ash, and sulfur produced by the Project (mostly for sale as commercially valuable by-products). A site layout drawing of the Project is shown in Figure 3-4.

As with the existing four generating units at Indian River, the Indian River IGCC Project will be a new stand alone unit that will share certain common facilities. Table 3-3 provides a partial list of new equipment and identifies which existing Indian River plant items will be shared.

Table 3-3 Major Equipment to be Shared and Added

Major Equipment	[redacted]
Exhaust Stacks	
Transmission lines to substations on site	
Transformers	
Heat recovery steam generator	
Steam turbine generators	
Gas turbine generators	
High-energy steam piping	
Lubrication and seal oil systems	
Surface condenser	
Unit control system	
Hybrid cooling tower	
Raw water storage tanks	
Demineralized water storage tanks	
Raw water intake system	
Raw water pumps	
Condensate pumps	
Boiler feedwater pumps	
Selective catalytic reduction system for NO_x removal	
Oxidation catalyst for CO and VOC removal	
Continuous emissions monitoring system	
Oil/water separators	
Wastewater discharge structure	
Natural gas pipeline	
Oil Unloading and Storage Facilities	
Plant communication system	
Coal gasification system	
Sulfur recovery system	
Rail line	
Coal pile, coal handling equipment and conveyors	
Solid waste landfill	
Road (ingress/egress)	

See Basis of Design document in Appendix 2 for further detail

3.4 Operating Characteristics

A listing of key project operating characteristics is shown in Table 3-4. [redacted] NRG has already expended millions of dollars on engineering and design studies to date and believes that the data obtained (in terms of costs and performance) are very representative of the final design performance. One key difference, as shown in the table, is when carbon capture is added, the result is lower net output and a higher heat rate. This is an unavoidable result since carbon extraction removes a portion of the useful energy that was in the coal before it was converted into electricity and the higher parasitic loads required for carbon sequestration.

Table 3-4 Key Project Operating Characteristics

	[redacted]	[redacted]
Net Summer Capacity (@ 54°F)	600	[redacted]
Heat Rate (Btu/KWh)	[redacted]	[redacted]
Availability After Initial Ramp-up	[redacted]	[redacted]
Cold Start (with warm ASU)	[redacted]	[redacted]
Cold Start (with cold ASU)	[redacted]	[redacted]
Warm Start (off-line from 1-6 hours)	[redacted]	[redacted]
Hot Start (off-line <1 hours)	[redacted]	[redacted]
Shutdown Time (max to 0 output)	[redacted]	[redacted]
Minimum On-Line Time	[redacted]	[redacted]
Minimum Off-Line Time Before Restart	[redacted]	[redacted]
Ramp Rate (MW/minute)	[redacted]	[redacted]

Numerous lessons learned from previous IGCC projects will be implemented in the Indian River IGCC Project in order to achieve targeted availability within a minimum initial ramp-up period. [redacted] An important component of availability is the sparing philosophy employed by the proposed Project. The sparing philosophy for the Indian River IGCC Project starts with the entire unit being having two separate 50% gasification and power trains feeding into a single highly reliable steam turbine. Each train can operate independently of the other, significantly reducing the probability of the facility being totally off-line. Critical pumps, instruments and other items will be spared to minimize planned and unplanned outages. The O&M plan, detailed in Section 11, will include a robust preventative maintenance and predictive maintenance policy. O&M advisors experienced in operating IGCC units have been engaged since the earliest stages of the Indian River IGCC Project, and opportunities to improve availability will be actively sought and implemented during its detailed design, construction and operating phases.

Table 3-5 demonstrates the sparing philosophy for the Indian River IGCC Project.

Table 3-5 Sparing Targets for Indian River IGCC Project

System	Type	Quantity/Capacity
Gasifier	[redacted]ressurized entrained flow	2 x 50%
Fuel Feed	Dry coal, nitrogen pressurized injection	2 x 60%
Fuel Preparation	Milling and drying	3 x 50%
Syngas wet scrubbing	Tray counterflow	2 x 50%
Syngas Cooling	Membrane wall gasifier, syngas quench, water tube syngas cooler	2 x 50%
Dry solids removal	Cyclone, candle filter	2 x 50%
Air Separation Unit (ASU)	Cryogenic, 95 mol% oxygen. Air supply integrated with gas turbine	2 x 50%
COS Hydrolysis	Fixed bed catalyst column	2 x 50%
Mercury removal	Sulfated carbon bed	2 x 50%
Acid Gas Removal	MDEA	1 x 100%
Sulfur Recovery	Claus plant	1 x 100%
Syngas humidification		2 x 50%
Flare System	Free standing elevated flare	1 x 100%
Hydrogenation Reactor and Gas cooler		1 x 100%

The Indian River IGCC Project is planned to be in-service on or before [redacted] Although the nominal design life of the project is 30 years, the practical life of the facility is in fact expected to be 40 - 50 years, assuming adherence to high operating and maintenance standards. Given NRG's history and reputation for maintaining safe and efficient operations for older generating assets, the expectation is that the Indian River IGCC Project will operate well into the middle of this century.

4 Fuel Plan

4.1 Plan Overview

Primary fuel for an IGCC plant is synthetic fuel gas made from gasifying coal. The Indian River IGCC Project will use up to [redacted] tons of comparatively low-cost coal [redacted] as its primary feedstock. [redacted] As a means to provide greater value to our proposal and to Delmarva, NRG is prepared to provide certain fuel price stabilization mechanisms [redacted] through its Commercial Operations group, as described in Section 2.

[redacted]

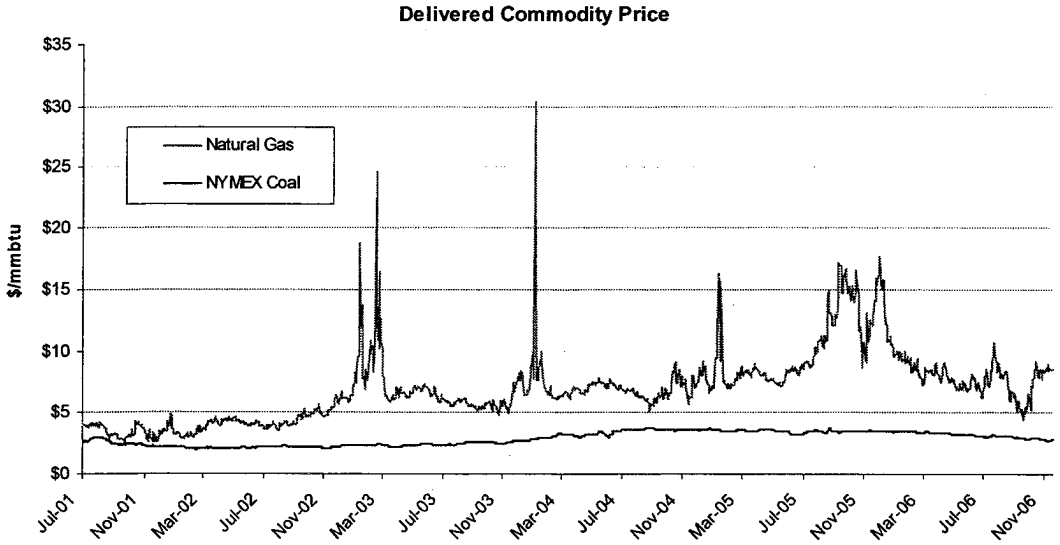
Fuel procurement and transportation contracts will be handled by the NRG Fuels Group. NRG is one of the largest coal buyers in the country and has extensive experience in purchasing multiple grades of coal from all domestic producing regions, as well as importing coal from several foreign origins. NRG also owns one of the largest private rail car fleets in the country, insulating it from the railcar supply shortages which historically have caused supply chain disruptions. [redacted]

[redacted]

Coal versus Natural Gas

NRG believes coal is the logical fuel choice to meet Delaware's growing baseload demand - it is an abundant domestic fuel that has historically demonstrated long term pricing stability. This is in contrast to the inherent high price and supply volatility witnessed in the gas and oil markets. Figure 4-1 demonstrates the five-year historic price and volatility of natural gas relative to coal. Even including delivery charges, coal has proven to be a cheaper, more stable fuel source than gas and oil. With the proposed emissions controls and carbon capture equipment, the Indian River IGCC Project will have an environmental impact approaching that of a combined cycle natural gas plant, while providing material protections to consumers from the price shocks that can affect natural gas dependant facilities. The extremely wide historical spread between delivered natural gas and delivered coal is expected to continue over the long term.

Figure 4-1 Five Year Comparison of Delivered Natural Gas and Coal Prices [1]



The large delivered cost difference between natural gas and coal shown in Figure 4-1 highlights the comparative advantage of an IGCC relative to a natural gas fired combined cycle plant. For the past two decades, natural gas combined cycle plants have been the overwhelming choice of power plant developers due to the ease in securing air emissions permits and low initial capital costs. Over this same period, natural gas prices and volatility have increased to the point where gas-fired combined cycle plants are currently not competitive with coal over the life of the plant. NRG has chosen IGCC because stability in the supply and price of the fuel, as well as reliability advantages, from using coal are now combined with the ability to meet the most stringent emission requirements, making IGCC the sensible technology choice for the next generation of power production.

4.2 NRG Fuels Group

NRG is one of the largest coal buyers in the U.S., supplying approximately 36 million tons annually to its domestic coal-fired power plants located across the country. NRG's [redacted] in-house fuel supply group manages fuel procurement and transportation for NRG's large domestic fleet. [redacted]

NRG has extensive experience in purchasing multiple grades of coal from all domestic producing regions, as well as importing coal from several foreign origins. NRG transports coal on five Class I railroads; manages a major barging operation on the Mississippi River; transports coal on the Great Lakes; ships coal along the East Coast in ocean barges; and manages ocean-delivered import shipments to the Northeast as well as the Lower Mississippi River. NRG's fuel shipments are supported by one of the largest private railcar utility fleets in the country which will increase to 7,900 railcars by early 2007.

The NRG Fuels Group is also responsible for supplying various grades of petroleum to its domestic power plants. For 2006, NRG's oil desk sourced and delivered over three million barrels

[1] Figure 4-1 illustrates the five-year historical delivered prices of NYMEX Eastern coal as compared to NYMEX Henry Hub + Transco Non-NYC basis. This shows the all-in delivered price of Eastern coal to an eastern PJM facility has maintained its cost between $3 - $4/MMBtu over the past five years. In contrast, the all-in delivered price of natural gas has been more extreme, ranging from $3.50 to over 30.00 per MMBtu.

of residual fuel oil and over five million gallons of various distillate fuels. [redacted]

4.3 Fuel Supply and Transportation

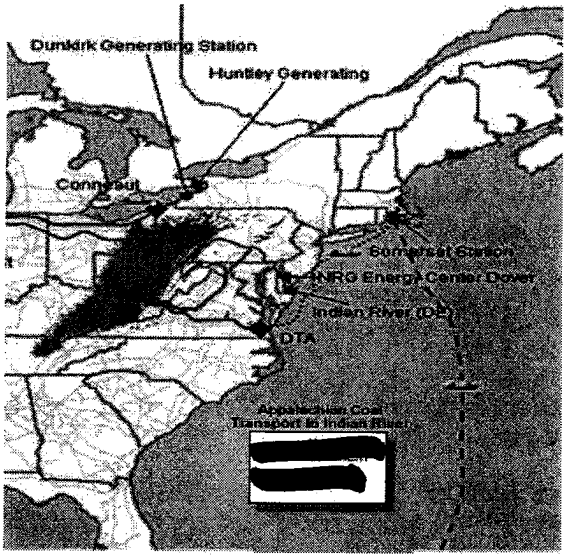
Coal Supply

NRG purchases over [redacted] coal annually for the existing Indian River plant. Suppliers include major producers such as [redacted]. NRG anticipates that these producers, as well as several others, will supply coal for the Indian River IGCC Project. The fuel component of the proposed energy pricing is based on coal proposals received under a recent RFP solicitation which included these suppliers, among other leading coal industry participants. [redacted]

[redacted] The most economically attractive coal is expected to be sourced from the Central Appalachian coal fields of West Virginia, Kentucky, Virginia and Ohio. NRG's diverse portfolio of purchasing options will be used to supplement these primary sourcing locations with various domestic and international coal producing regions.

[redacted]

Figure 4-2 Rail Map



[redacted] use existing rail transportation routes for the delivery of the coal [redacted] to the proposed project. [redacted]

[redacted]

Indian River's coal handling system will be upgraded to transport coal from the rotary dumper to the coal storage yard or coal bunkers [redacted]. The upgraded coal handling system will consist of a new rotary dumper, track loop and storage for primary and secondary fuels and will be sufficient to serve the proposed IGCC unit.

[redacted]

[redacted]

Biomass Feedstock

NRG is also considering the use of biomass for a small percentage [redacted] of the feedstock for the Indian River IGCC Project. Biomass, to the extent it is used, will be contracted for on a spot basis and will produce Renewable Energy Credits from the Project.

[redacted]

Pages 60-61 have been redacted in their entirety.

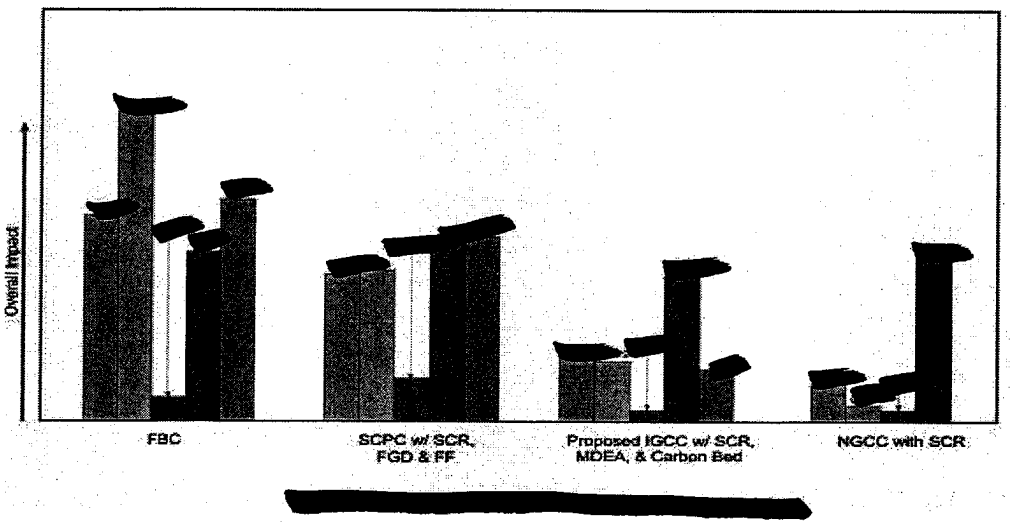
5 Environmental Benefits and Impacts

The selection of IGCC technology for the Indian River repowering project is in direct response to meeting the very important energy and environmental goals of Delaware and Delmarva in issuing the RFP – particularly around the legislature's priority on long-term environmental benefits including carbon capture potential, and electricity price stability. IGCC has significant strategic and environmental benefits, including:

- Reduced impacts to air, water, and land relative to traditional coal projects - comparable to natural gas-fired generation (but without the pricing volatility factors associated with natural gas);
- Radically reduced emissions impacts at the existing Indian River Generating Station site; and
- Utilization of available domestic fuel stock, consistent with the national policy objective of reducing dependence on foreign fuels and vulnerability to world events.

Given the especially significant investments required to build a new baseload generating unit, the importance of being able to maximize CO_2 capture is a critical objective in the anticipation of a carbon-constrained future. The desire for carbon capture is clearly reflected in Delaware's far-sighted policies, and we believe that the Indian River IGCC Project proactively responds to the spirit and intent of these key State objectives.

Figure 5-1 Environmental Comparison[2]



5.1 Environmental Advantages of IGCC

IGCC technology has, by design, significantly lower air emissions, water use and discharge, and waste generation than the alternative technologies. Compared to circulating fluidized bed ("CFB"), super-critical pulverized coal ("SCPC"), and natural gas combined cycle ("NGCC") technologies, the air emission, water use, and waste generation impacts of an IGCC plant are

[2] Based on average of recently issued permits, Environmental Footprints and Costs of Coal-based Integrated Gasification Combined Cycle and Pulverized Coal Technologies, June 2006 for bituminous and sub-bituminous coal, New Source Performance Standard emission limits for Mercury, and industry experience.

comparable to the overall impacts of natural gas fired combustion turbines, as shown in Figure 5-1, Figure 5-2, and Figure 5-3, respectively, without exposure to volatility in energy prices reflecting more highly and variably priced natural gas.

Lower Emissions

IGCC technology can achieve low emissions levels because pollutants are removed in a concentrated form during the gasification process rather than in a diluted form after combustion. Removing pollutants during gasification allows a more complete capture of pollutants, at a lower cost, and with less overall waste generated. For example, over 99% of sulfur can be removed in the gasification process to produce a saleable by-product of pure elemental sulfur. Plants using pulverized coal or circulating fluidized bed technology can mitigate post-combustion sulfur emissions using scrubbers, though not as effectively as an IGCC plant. Additionally, post-combustion scrubbing results in significantly larger quantities of ash or sludge being produced, most of which must be landfilled.

An IGCC project can remove over 95% of mercury during the gasification process using a sulfur impregnated carbon bed. Mercury captured during this process is fixed in the very stable form of mercuric sulfide, and may also be recovered from the carbon bed in its elemental form. By contrast, pulverized coal technology can remove up to 90% of mercury with a series of costly pollution control devices, although there is some debate on how efficiently this can be achieved as a technical matter. The extraction process of a traditional coal plant removes mercury from the exhaust gas which is then combined with the ash, most of which is then landfilled. Regardless of the feasibility of technical extraction, such retrofits may not be justified by the economics of existing coal-fired units. By removing mercury from gasification in a concentrated exhaust stream, the mercury extraction in the IGCC process costs approximately one-tenth that of a conventional pulverized coal plant.

Pollutants, which are products of combustion in the gas turbine, can be reduced to levels comparable to the most recently permitted natural gas-fired combustion turbines using good combustion techniques, Selective Catalytic Reduction ("SCR"), and oxidation catalyst. Table 5-1, below, shows expected emissions by type of technology. Table 5-1 demonstrates the comparative air emissions profiles of various generation technologies, clearly favoring IGCC based on emission rates and net annual emissions.

Table 5-1 Comparative Emissions Profiles of Different Generation Technologies

	IGCC	Oxycombustion	Pulverized Coal (FGD & SCR)	Super-Critical Coal (FGD & SCR)	NGCC
SO_2/MMBtu	0.02-0.08	0.10-0.25	0.22-0.60	0.17-0.25	N/A
NO_x/MMBtu	0.03-0.08	< 0.15	0.06-0.16	0.04-0.14	0.03-0.06
Mercury Removal	90%-98%	Depends on Fuel	40%-80%	40%-80%	N/A
CO_2, tons/MWH	0.85-0.95	1.0-1.2	1.0-1.1	0.9-1.0	0.4-0.5

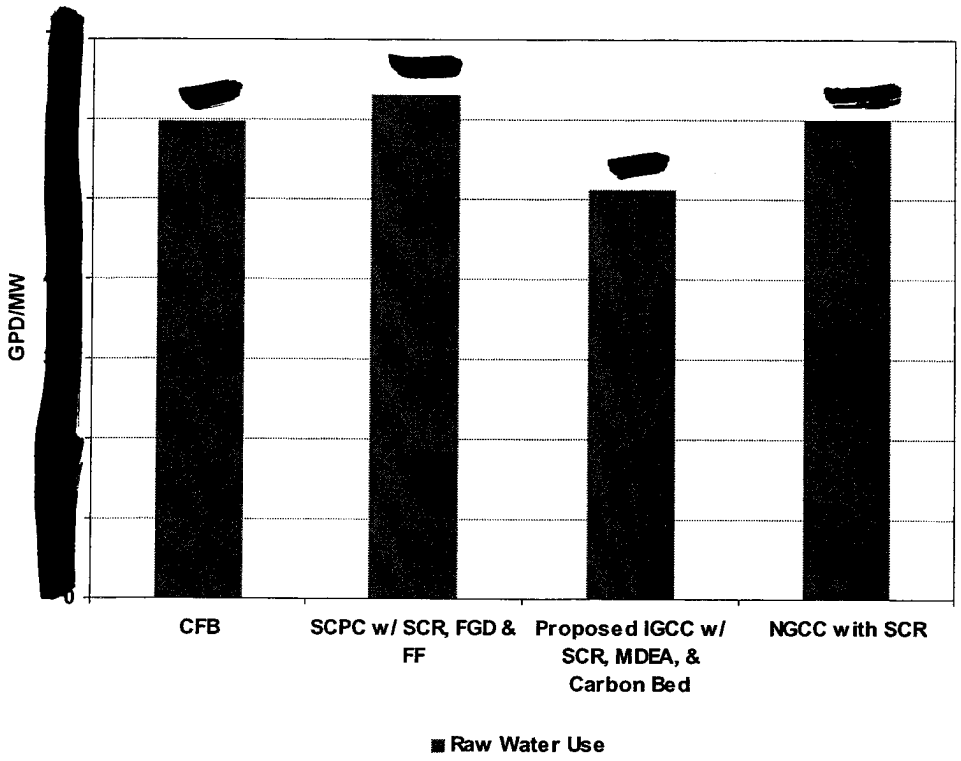
Note: IGCC retains the ability to efficiently capture carbon, other technologies do not.

Less Water Use & Discharge

In general, water use and discharges are lower for IGCC projects primarily because the steam cycle in an IGCC plant typically produces less of the plant's power than a coal combustion-based

power plant. Additionally, the Indian River IGCC Project will use a Zero Liquid Discharge ("ZLD") system for process wastewater from gasification and power production. Figure 5-2 illustrates IGCC's reduced water requirements compared to various other generating technologies.

Figure 5-2 Water Use Comparison

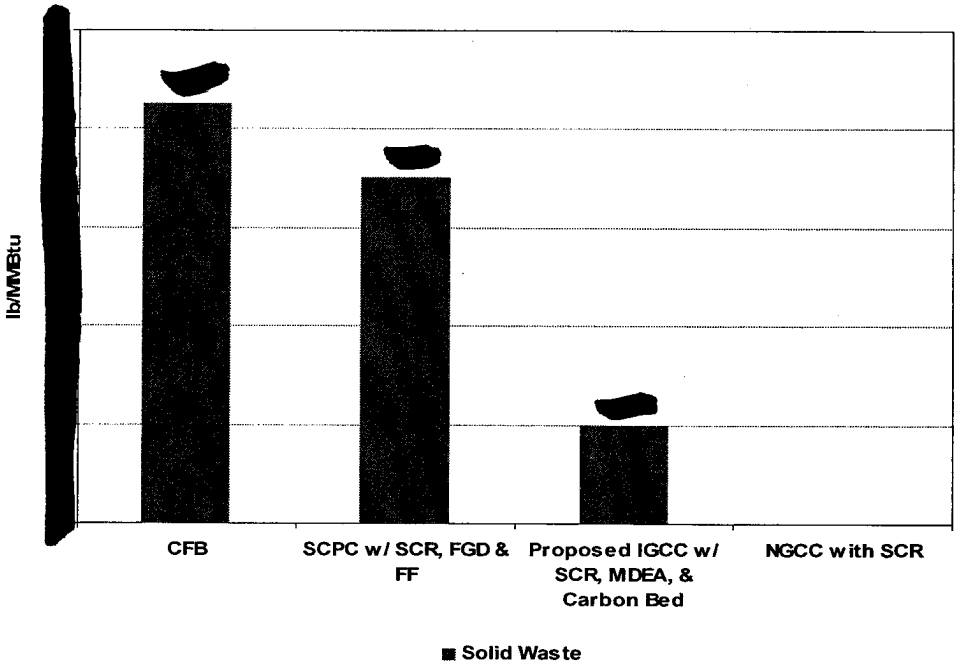


Less Solid Waste

IGCC plants also produce less solid wastes, compared with pulverized coal power plants, primarily due to the advantage of removing pollutants in a concentrated form with more efficient technologies. Further, most waste streams generated by an IGCC unit are saleable and suitable for beneficial reuse. The largest solid waste stream produced by IGCC technology is slag, a vitrified glass-like material derived from the inert (noncombustible) ash in coal. Slag can be used for asphalt, road bed material and other industrial applications that use aggregates. In addition to the gasification product waste, the sulfur in the fuel is removed and is available in a pure elemental form for sale to the chemical industry.

Figure 5-3 demonstrates the radically reduced volume of waste generation from IGCC compared with alternative solid fuel technologies.

Figure 5-3 Waste Generation Comparison



5.2 Environmental Improvements at Indian River

Commitment to Retire Units 1 & 2

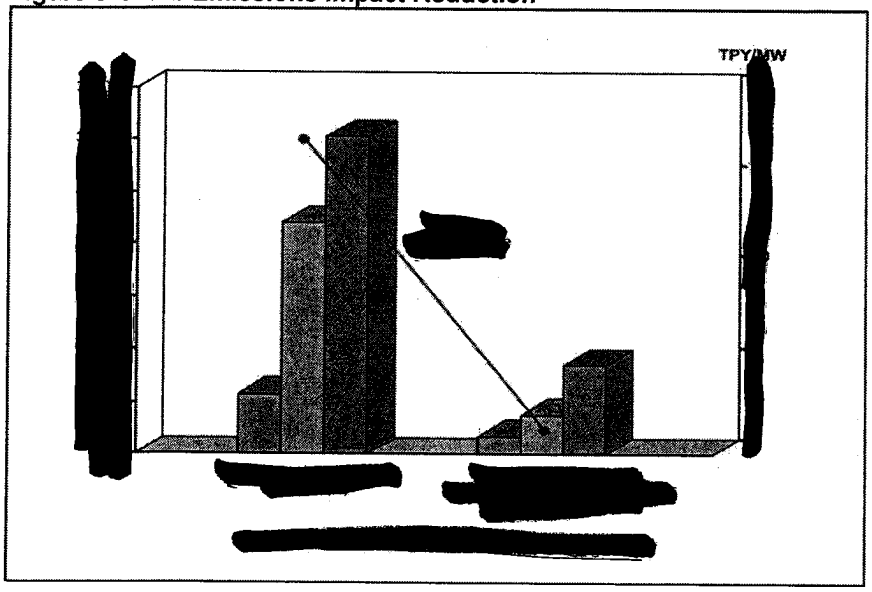
As part of NRG's proposal to develop the Indian River IGCC Project, NRG is prepared to commit to the early retirement of the existing Indian River Units 1 and 2. As stated earlier, this commitment is contingent upon a PPA, for 400 MW of capacity and energy, being awarded to the Indian River IGCC Project. Retirement of existing Units 1 and 2 will provide Delaware with significant incremental environmental benefit in addition to the benefits already derived from the IGCC unit as a stand alone facility. These existing units represent approximately 30% of the existing plant's current generation and emissions profile. Although these 1957 and 1959 vintage units use low sulfur coal, contain NOx and particulate matter emissions controls, and are scheduled for new backend controls for the reduction of SO_2, NOx, and Hg emissions; continued operation of these units (after controls are applied) would still result in additional emissions, exceeding those projected from the IGCC, and impacting Delaware's efforts to meet (ozone) or maintain (SO_2, $PM_{2.5}$) ambient air quality standards.

The early retirement of these units is possible only with the development of the Indian River IGCC Project and the additional capacity it provides to maintain a reliable electrical supply to the Delmarva Peninsula (see Section 8 for a discussion about the electrical system need for sufficient capacity in the vicinity of the existing Indian River plant). Based on emission potential, Delaware would realize a quantifiable annual reduction (based on new regulatory caps) [redacted]

Improved Air Emissions

Compared to current operations, the retirement of existing Units 1 and 2, along with the installation of the new IGCC facility, will result in [redacted] reduction of emissions for every MWh of electricity produced. Not only will Delaware have the opportunity to capitalize on new, state-of-the-art efficient generation for its long term future, but 182 MW of less efficient and higher emitting generation will also be permanently retired. This is clearly illustrated in Figure 5-4.

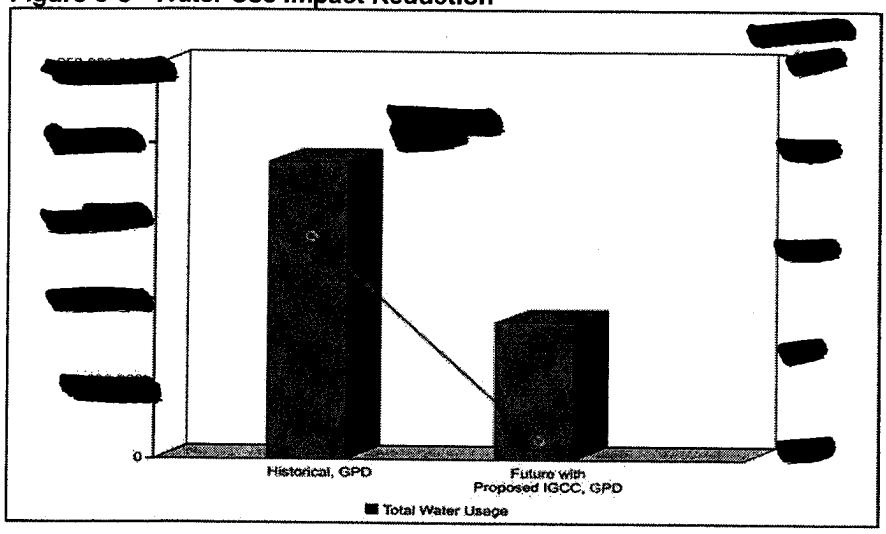
Figure 5-4 Air Emissions Impact Reduction



Reduced Water Use and Discharge

Overall water use and discharge will decrease significantly at the Indian River Plant site compared to both historical and current conditions. The reduction in water use will also minimize impingement and entrainment issues by using a closed cycle cooling system for the IGCC and utilizing the existing intake and discharge structures. As
Figure 5-5 shows, there is expected to be a [redacted] decrease in water use measured as million gallons per day per MWh of electricity.

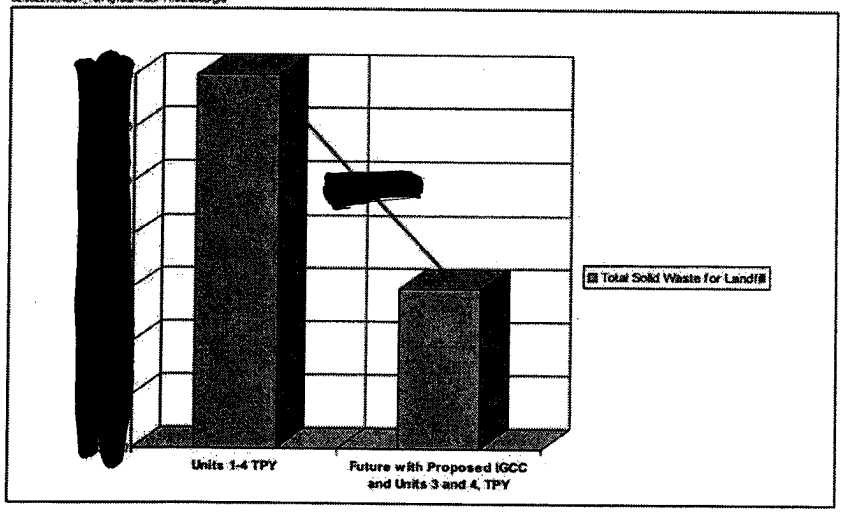
Figure 5-5 Water Use Impact Reduction



Reduced Solid Waste

The lower waste generation rates for IGCC and the opportunity for reuse of IGCC process wastes as commercially valuable by-products will minimize impacts to the environment. As Figure 5-6 shows, with an estimated by-product reuse rate approaching 100%, the impact of solid wastes to the environment will decrease [redacted] on a tons per MWh basis, even with an [redacted] increase in electrical generation.

Figure 5-6 Waste Generation Impact Reduction



[redacted]

5.3 Potential Impacts and Proposed Mitigation

NRG's analysis of potential environmental impacts and proposed mitigation is consistent with the Delmarva RFP requirements and the expected scope of analysis required by the Delaware Coastal Zone Permit. The following topics are addressed:

- Air Emissions;
- Water Resources;
- Hazardous and Solid Waste Management;
- Land Impacts, including wetlands, terrestrial and aquatic environments, threatened and endangered ("T&E") species protection, coastal zone, agricultural areas, corridors, and scenic byways;
- Land Use and Zoning; and
- Socio-Economics, including visual landscape, archaeological and historic sites, landmarks and sensitive areas, noise impacts, transportation impacts, FAA impacts, and economic development.

NRG has incorporated design standards with the specific objectives of minimizing environmental impacts and proposed compliance with mitigation methods that address the full range of potential environmental and community concerns. The potential impacts and NRG's proposed mitigation activities are summarized in Table 5-2.

Table 5-2 Summary of Potential Impacts and Proposed Mitigation

Environmental Concern	Potential Impacts	Proposed Compliance and Mitigation
Air Emissions		
- CONSTRUCTION	• Vehicle exhaust emissions • Dust • Demolition	• Maintain and operate equipment per manufacturers' recommendations • Non-Road Sulfur Rules • Temporary enclosures
- Operation	• Emissions from combustion • Cooling tower emissions and visible plume	• Primary fuel – syngas • Selective catalytic reduction for nitrogen oxides (NOx) • Oxidation catalysts for carbon monoxide (CO), volatile organic compounds (VOCs), and other key air pollutants [redacted]y
Water Resources		
- Construction	• Erosion from storm water runoff	• Best management practices ("BMPs")

Environmental Concern	Potential Impacts	Proposed Compliance and Mitigation
- Operation	• Impingement and entrainment from withdrawal from Indian River • New/additional coal pile drainage • Thermal discharge • Wastewater from gasifier	• Best technology available ("BTA") using closed cycle cooling • Minimize thermal effluent • Zero liquid discharge design for process wastewater
Hazardous and Solid Waste Management		
- Construction	• Generation of construction-related wastes	• Minimize and properly manage waste generation and disposal
- Operation	• Generation of new wastes associated with gasifier, cooling tower, and catalysts • Storage/delivery of aqueous ammonia	• Minimize and properly manage waste generation and disposal • OHSA compliance
Wetlands, terrestrial and aquatic environments, T&E species		
- CONSTRUCTION	• Potential for minor fill	• None anticipated (off-site mitigation possible)
- Operation	• Entrainment and impingement of fish, eggs, and larvae	• Cooling tower to minimize water withdrawal from Indian River
Coastal Zone		
- CONSTRUCTION	• Temporary traffic increase	• Provide on-site construction parking
- Operation	• None	• Completion of EIS
Agricultural Areas		
	• none	• NA
Corridors		
	• none	• NA
Scenic Byways		
	• none	• NA
Land Use and Zoning	• None anticipated given the existing facility	• None anticipated
Visual Landscape		
- Construction	• Site disturbance due to construction activities	• Barrier fencing

Environmental Concern	Potential Impacts	Proposed Compliance and Mitigation
- Operation	• Construction of gasifier, cooling tower, and new stacks • Alterations of views from public roads	• Retention of natural vegetation along public roads
Archaeological and Historic Sites		
	• None with conceptual site plan	• None anticipated
Landmarks and Sensitive Areas		
Noise Impacts		
- Construction	• Construction equipment • Pile driving	• Limiting hours for outdoor construction activities
- Operation	• New operating equipment	• Select low noise equipment • Install enclosures/buildings
Transportation Impacts		
- Construction	• Temporary increase in traffic	• Provide adequate parking and construction staging area • Avoid peak commuting hours for deliveries
- OPERATION	• Minor increase in slag hauling • Increased fuel deliveries • Removal of byproducts	• None anticipated
Economic Development		
- Construction	• Temporary construction employment	None anticipated
- Operation	• None anticipated	None anticipated

Air Quality

The Indian River IGCC Project will not adversely affect air quality in Sussex County or the National Ambient Air Quality Standards ("NAAQS") compliance requirements for the State of Delaware. Air quality data were obtained from the USEPA Aerometric Information Retrieval System ("AIRS") and DNREC annual reports. The DNREC monitors air quality with monitoring systems established throughout the state. Based on recorded data, air quality in Sussex County is better than the standards for all criteria pollutants, except ozone. Since ozone is generally not emitted directly to the atmosphere through industrial processes, the precursors of volatile organic compounds ("VOCs") and nitrogen oxides ("NO_x"), which combine to form ozone, are regulated. Sussex County is designated as a moderate (Subpart 2) eight-hour ozone non-attainment area. In addition, the one-hour ozone designation is still relevant; Sussex County is in a marginal one-

hour ozone non-attainment area. Most counties in the northeast U.S. are designated non-attainment for each ozone standard.

Recently the USEPA promulgated a new NAAQS for the 24-hour $PM_{2.5}$ standard and revoked the PM_{10} annual standard. New Castle County was declared non-attainment for $PM_{2.5}$ based on concentrations that were above the annual average air quality standard during 2001-2003; the most recent three years show concentrations that are at the level of the air quality standard. Kent and Sussex counties continue to record concentrations below the standard. Further, the USEPA has determined Delaware emissions, including those from the existing Indian River power plant, are not a contributor to violations of fine particulate standards in down-wind states.

Potential Impacts and Proposed Mitigation during Construction

Emissions produced during construction of the Indian River IGCC Project will only consist of exhaust emissions from construction-related equipment and dust generated during soil disturbing activities. Typical pollutants emitted in the exhaust of construction equipment include carbon monoxide ("CO"), NO_x, sulfur dioxide ("SO_2"), particulate matter ("PM"), particulate matter of 10 microns or less ("PM_{10}"), and VOCs. Dust generated during construction may consist of particles primarily larger than PM_{10}; however, some dust may consist of particles smaller than PM_{10}.

To mitigate potential impacts, the following measures will be used during construction:

- Construction equipment will be maintained and operated in accordance with manufacturers' recommendations;
- Fuel used in construction equipment will comply with USEPA on-road and off-road fuel specifications in place during the construction time frame;
- Dust generated during soil disturbing activities will be controlled with dust suppression techniques such as application of water to exposed soil and material;
- Water will be used to wet construction debris as required to prevent dust emission; and
- Transport of construction debris will take place in covered haul trucks or in closed containers.

Potential Impacts and Proposed Mitigation During Operation

The Indian River IGCC Project design includes state of the art emission controls on all emission units and the anticipated Best Available Control Technology ("BACT") and Lowest Achievable Emission Rate ("LAER") necessary to minimize impacts. The proposed IGCC emissions will approach that of a natural gas-fired combined cycle power plant, with the additional benefit of low cost fuel, fuel diversity, and reduced fuel availability and price risk. The proposed design mitigation includes:

- Coal gasification to generate raw syngas from coal, petroleum coke and biomass;
- Ceramic candle filter for particulate removal;
- Sulfur impregnated carbon bed for mercury removal;

- MDEA (Methyldiethanolamine) scrubbing for acid gas (sulfur) removal for cleanup of the raw syngas;
- Clean syngas (mostly hydrogen) as the primary fuel for combustion, and ultra-low sulfur diesel as the secondary fuel for start up and backup for the combustion turbines;
- Nitrogen (diluent) injection, and aqueous ammonia (less than 19%) injection for the Selective Catalytic Reduction ("SCR") system for NOx control from the combustion turbines;
- Oxidation catalyst to control emissions of CO, VOCs and hazardous air pollutants ("HAPs") from the combustion turbines; and
- Best available control technology for solids handling and storage (coal, coke, ash, and slag).

Emissions and Control Technology

The major analysis requirements that are expected to be required to be satisfied for the Indian River IGCC Project under New Source Review ("NSR") are shown in Table 5-3. Compliance with key regulatory standards and the mitigation of potential impacts with respect to these key criteria are described below.

Table 5-3 Analysis Requirements under New Source Review

Component	PSD	NAA
Control Technology Evaluation	BACT	LAER
Air Quality Impact Analysis	- Dispersion Modeling - Compliance with Ambient Standards - Compliance with allowable ambient increase (increment)	-Offsets
Additional Impact Analysis to Soil, Vegetation, etc.	Required	Not required
Class I (pristine) Air Quality impact analysis	Required	Required
Potentially Applicable Pollutants	SO_2, PM_{10}, H_2SO_4, CO	NO_x, VOC

The estimated annual emission rates for syngas firing, NSR applicability determination, and proposed BACT and LAER for the combustion turbines are summarized in Table 5-4. The estimated annual emission rates for diesel oil firing as backup fuel, and proposed BACT and LAER for the combustion turbines are summarized in Table 5-5. As final design and permitting proceed, performance guarantees will be obtained.

Table 5-4 Estimated Emission Rates, NSP Applicability and Proposed Emission Controls

Pollutant	[redacted]	[redacted]	BACT/ LAER	[redacted]	Combustion Turbine Proposed Emission Control
NO_x	[redacted]	[redacted]	LAER	[redacted]	Diluent Injection and SCR
VOC	[redacted]	[redacted]	LAER	[redacted]	Good Combustion and Oxidation Catalyst
PM/PM_{10} (1)	[redacted]	[redacted]	BACT	[redacted]	Candle Filter to clean raw syngas
CO	[redacted]	[redacted]	BACT	[redacted]	Good Combustion and Oxidation Catalyst
SO_2	[redacted]	[redacted]	BACT	[redacted]	MDEA Scrub to clean raw syngas (3)
H_2SO_4 (2)	[redacted]	[redacted]	BACT	[redacted]	MDEA Scrub to clean raw syngas
Hg (2)	[redacted]	[redacted]	N/A	[redacted]	Sulfur Impregnated Carbon Bed to clean raw syngas

(1) Includes filterable emissions from Combustion Turbine.
(2) Permit application emission rate will be based on actual coal.
(3) MDEA Methyldiethanolamine

Table 5-5 Oil Firing Estimated Emission Rates, NSR Applicability and Proposed Emission Controls (1)

Pollutant	[redacted]	BACT/ LAER	[redacted]	Combustion Turbine Proposed Emission Control
NO_x	[redacted]	LAER	[redacted]	Diluent Injection and SCR
VOC	[redacted]	LAER	[redacted]	Good Combustion and Oxidation Catalyst
PM/PM_{10} (2)	[redacted]	BACT	[redacted]	Good Combustion
CO	[redacted]	BACT	[redacted]	Good Combustion and Oxidation Catalyst
SO_2	[redacted]	BACT	[redacted]	Low sulfur diesel (15 ppm)
H_2SO_4 (2)	[redacted]	BACT	[redacted]	Low sulfur diesel (15 ppm)
Hg	[redacted]	NA	[redacted]	Not present in diesel fuel

[redacted]

(2) Filterable emissions from Combustion Turbine.

The recent promulgation of a lower 24-hour $PM_{2.5}$ standard will require coordination with DNREC on determination of LAER and offset requirements, if any. The Indian River IGCC will combust cleaned syngas, as opposed to solid fuel, which will minimize direct emission of $PM_{2.5}$ and will control both precursors, NOx and SO_2, in the syngas clean-up process and combustion process.

Table 5-6 identifies air emissions for the existing Indian River units and the proposed IGCC project, demonstrating a significant reduction in emissions both in real terms and on a pollutant/MWh basis. Historical emissions are based on average emissions from all units for 2004 and 2005 at the capacity factors during those years. Emission rates for Units 3 and 4 are reflected at the levels required by Regulation No. 1146 and historical capacity factors. The improvement in efficiency from the Indian River IGCC Project and the proposed shutdown of Units 1 and 2 is reflected in a significant reduction in overall total emissions [redacted]

Table 5-6 Historical and Future Emissions Comparison (Tons/Year)

Pollutant	Historical Emissions Units 1-4	Future Emissions with IGCC and Shut Down of Units 1 & 2
NO_x		
VOC		
$PM_{10}/PM_{2.5}$		
CO		
SO_2		
H_2SO_4		
Mercury		
Total		
MWh (net)		
lbs/MWh (net)		
% Decrease		*88%*

Emission Offsets

Due to Delaware's ozone non-attainment status, emission reduction credits ("ERCs") will be required to offset the project predicted emissions for NOx and VOC. In compliance with Federal and State NSR non-attainment area requirements, emissions from the Indian River IGCC Project will be offset by a ratio of 1.15 to 1. The use of control technology expected to meet standards for the LAER under NSR, results in a minimal requirement for ERCs. Table 5-7 summarizes the predicted IGCC emissions, offsets required, and the potential sources of ERCs. Based on the analysis of predicted emissions and available offsets, the preliminary offset strategy for Indian River is to generate all required NO_x and a portion of the VOC ERCs through the shutdown of Units 1 and 2.

Table 5-7 IGCC Offset Analysis (+Excess/-Shortfall)

	NO_x	VOC
Predicted Emissions, TPY		
Predicted Offset Requirement		
Delaware Banked Offsets		
Additional Offset Requirements		
Offsets available from Indian River Units 1 & 2 Shutdown		

Air Quality Impact Analysis

Compliance with regulatory limits for air quality will be verified with modeling under a protocol to be approved by the DNREC. The analysis will use USEPA approved models to evaluate different operating scenarios and ambient conditions for all applicable emissions sources, including: worse case short-term and annual emission rates for each operating scenario, structure parameters for downwash analysis, stack parameters for each operating scenario, receptor network configuration, facility layout and property line configuration, meteorological data and land use/terrain data.

Class 1 Area Impacts

During the air quality impact analysis for a proposed major source project under Prevention of Significant Deterioration ("PSD") rules, special consideration is given to the analysis of air quality impacts at Federally designated Class 1 areas managed by the National Park Service and United States Fish and Wildlife Service. A Class 1 area is a pristine area such as a National Park, National Wildlife Refuge or other sensitive area afforded special protection under the Clean Air Act. Generally, the greater the distance between a proposed major emission source and a Class 1 area, the less likely there will be a degradation of air quality at the Class 1 area. There is no maximum distance criterion in place that excludes a project from the need to conduct a Class 1 analysis; however a distance separation on the order of 300 kilometers is suggested by regulatory precedents and the likelihood of impacts below significance thresholds at the Class 1 area.

The nearest Class 1 area to the Indian River facility is the Fish and Wildlife Service's Brigantine Wilderness area in southern New Jersey. This area is approximately 120 kilometers northeast of the Indian River site and in a predominately downwind location. The Shenandoah National Park is located due west of the facility at a distance of approximately 260 kilometers. Based upon the proposed IGCC emissions and the distance to Class 1 areas, no significant visibility impacts are anticipated.

Future Environmental Control Programs

Potential requirements for future emission reductions were considered for key regulated pollutants relevant to power plants (Mercury, SO_2, NOx, $PM_{2.5}$, and carbon dioxide).

Mercury

The USEPA's Clean Air Mercury Rule ("CAMR") establishes standards of performance for mercury emissions from new and existing coal-fired electric steam generating units ("EGUs"). Delaware's mercury budget is as shown in Table 5-8. Delaware's plan is to implement the Federal Section 111(d) and avoid a Federally imposed plan. Section 111(d) State Plan for the Control of Mercury Emissions for Coal Fired Electric Steam Generating Units is the basis for the mercury requirements defined in Delaware's newly promulgated Air Regulation No. 1146, Electric Generating Unit Multi-Pollutant Regulation ("Regulation No. 1146"). Regulation No. 1146 establishes a program that is designed to achieve emission reductions and cap overall mercury emissions from existing EGU's within Delaware. The mercury mass emissions limitations, expressed in tons per year, are those that will satisfy CAMR requirements. Both existing and new (i.e., construction after January 30, 2004) coal-fired EGUs are subject to this plan. In Section 111 (d), a New Unit Set Aside has been established to provide for new unit construction, also shown in Table 5-8.

As demonstrated in Table 5-8, the New Unit Set Aside combined with the allowances remaining after unit shutdowns and control of existing EGUs, are more than adequate for operation of the

Indian River IGCC Project and ensure that the Delaware cap continues to satisfy CAMR and Section 111(d) requirements. This is achieved first by all other operating EGUs achieving the emission limits established in Regulation No. 1146 (prior to commissioning of Indian River IGCC), by the shutdown of Indian River Units 1 and 2, and by the low emission rate from the Indian River IGCC.

Table 5-8 Demonstration of Compliance with Proposed Regulation No. 1146 for Mercury

	MERCURY EMISSIONS (Pounds)	
	PHASE I 2009-2012	**PHASE II** >2013
Existing EGU Mass Emission Limits		
Edgemoor	[redacted]	[redacted]
Edgemoor	[redacted]	[redacted]
Indian River Unit 1	[redacted]	[redacted]
Indian River Unit 2	[redacted]	[redacted]
Indian River Unit 3	[redacted]	[redacted]
Indian River Unit 4	[redacted]	[redacted]
Total	[redacted]	[redacted]
EGU Mass Emissions under Regulation No. 1146 and Shutdown of Indian River Units 1 and 2 [1]	[redacted]	[redacted]
Edgemoor	[redacted]	[redacted]
Edgemoor	[redacted]	[redacted]
Indian River Unit 1	[redacted]	[redacted]
Indian River Unit 2	[redacted]	[redacted]
Indian River Unit 3	[redacted]	[redacted]
Indian River Unit 4	[redacted]	[redacted]
Total	[redacted]	[redacted]
Unallocated Mercury Budget	[redacted]	[redacted]
New Source Set Aside (5% / 3%)	[redacted]	[redacted]
Total Unallocated Mercury Budget	[redacted]	[redacted]
Proposed Indian River IGCC Emissions @ 630 MW and 100 % Capacity	[redacted]	[redacted]
Remaining Unallocated Mercury Budget	[redacted]	[redacted]
[1] Using heat input from CAMR development		

The Indian River IGCC Project involves the lowest feasible emission rate of mercury from an IGCC. The sulfur impregnated carbon bed will capture at least 95% of mercury emissions, [redacted]

Assuming all operating EGU's comply with Regulation No. 1146, coupled with the shutdown of Indian River Units 1 and 2, Delaware will have an unallocated mercury budget [redacted] for allocation under the state cap. This inventory is sufficient for the Indian River IGCC Project.

Use of the unallocated mercury budget for the Indian River IGCC Project is consistent with Delaware's Section 111(d) and Regulation No. 1146 as mass emissions will not exceed the annual mercury budget. The use of unallocated mercury budget does not create allowances nor does it create a cap-and-trade program. The unallocated mercury budget may only be assigned by Delaware to an EGU as an Annual Mercury Mass Emission Limitation per Regulation No. 1146 and Section 111 (d).

Carbon Dioxide

Delaware's Senator Carper introduced the Clean Air Planning Act of 2006 to require old power plants to modernize and reduce pollution levels, provide incentives to build new, cleaner power plants, and begin to address climate change in a meaningful and cost-effective way. The proposed Indian River IGCC Project will comply with all aspects of the Clean Air Planning Act with respect to NOx, SO_2, and mercury, and will meet the goal of beginning to address climate change. Specifically, the Clean Air Planning Act proposes to cap carbon dioxide emissions from power plants at 2006 levels by 2010 and reduce them to 2001 levels by 2015. With the shutdown of Units 1 and 2 and the ability to capture [redacted] carbon from the Indian River IGCC, carbon dioxide levels emissions at the site will be approximately equal to CO_2 levels in 2000. Further, there will be an overall increase in electricity produced, with a corresponding [redacted] reduction in CO_2 impacts on a lb/MWh (net) basis.

Table 5-9 Indian River CO_2 Emissions Forecast

Pollutant	[redacted]	[redacted]
CO_2	[redacted]	[redacted]
MWh (net)	[redacted]	[redacted]
lb/MWh	[redacted]	[redacted]
% Decrease		[redacted]

Under the Regional Greenhouse Gas initiative ("RGGI") eight Northeast states (Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, Vermont, and Maryland) have joined together to reduce greenhouse gas emissions, by instituting a cap-and-trade program that limits CO_2 emissions. Under this program CO_2 emission from power plants would be limited at approximately current levels of 121 million tons per year beginning in 2009 until 2015. Emissions would then be reduced over a four year period to reduce emissions by 10% by 2019.

The RGGI applies to coal-fired, gas-fired, or oil-fired power plants that have a capacity equal to or greater than 25 MW. Under the cap-and-trade program, a power plant could buy and sell allowances or "emission credits," but the plant emissions must not exceed the number of allowances in its possession. Under the RGGI at least 25 percent of a state's allowances will be used for strategic energy or programs that benefit the consumer, such as energy efficiency, new clean energy technologies and ratepayer rebates.

The RGGI has produced a model rule which is being used as the basis to develop greenhouse gas regulations on a state by state basis. Delaware has not yet publicly announced a regulation or companion rule associated with the RGGI initiative. However Delaware has endorsed the initiative and plans to participate as the rule becomes final. It is anticipated the Indian River IGCC Project will be optimally-placed to comply with the intent of the rule, together with the key policy objectives of the EURCSA.

Sulfur Dioxide

The Indian River IGCC Project will be a regulated EGU under the USEPA's proposed Clean Air Interstate Rule ("CAIR") for Delaware and New Jersey, and under Delaware's draft Regulation No. 1146. Although Delaware was not a contributor to downwind $PM_{2.5}$ NAAQS or subject to CAIR on its own merits, Delaware has been combined with New Jersey as "one region" and Delaware has adopted the USEPA's CAIR rule by virtue of not filing a plan by September 11, 2006. The CAIR rule defines annual emissions allocations for new and existing sources effective 2010. Regulation No. 1146 specifies SO_2 emission limit requirements by EGUs starting in 2009. Delaware's Regulation No. 1146 incorporates the proposed SO_2 reduction requirements of CAIR. The expected SO_2 emission rate from the Indian River IGCC Project is [redacted] well below the 2012 limit of 0.26 lb/MMBtu proposed by CAIR and Regulation No. 1146.

With the shutdown of Indian River Units 1 and 2, NRG will have an unallocated SO_2 allowance budget of over [redacted] tons under the State cap. Use of the unallocated SO_2 budget for the Indian River IGCC Project is consistent with Delaware's Regulation No. 1146 as mass emissions will not exceed the annual SO_2 budget. The use of the unallocated SO_2 budget does not create allowances nor does it create a cap-and-trade program. The unallocated SO_2 budget may only be assigned by Delaware to an EGU as an Annual SO_2 Mass Emission Limitation per Regulation No. 1146.

Nitrogen Oxides

NOx emissions for the Indian River IGCC are also regulated under the USEPA's CAIR for Delaware and New Jersey, and under Delaware's Regulation No. 1146. Unlike SO_2 allocation, the proposed CAIR rules provide allocations to the State which in turn are reallocated to emission sources. Regulation 1146 rules specify NOx emission limits and unit specific emissions caps starting in 2009. Delaware's draft Regulation No. 1146 incorporates the proposed NOx reduction requirements of CAIR but does not include the full emissions trading flexibility of CAIR. The expected NOx emission rate from the Indian River IGCC Project is [redacted] well below the 2012 limit of 0.125 lb/MMBtu proposed by CAIR and Regulation No. 1146.

With the proposed shutdown of Indian River Units 1 and 2, Delaware will have an unallocated NOx budget of over [redacted] tons under the State cap. Regulation No. 1146 caps annual NOx emissions for Unit 1 at 628 tons per year and for Unit 2 at 977 tons per year. The allocated emissions for Units 1 and 2 exceed the expected NOx emissions for the Indian River IGCC Project.

Ozone

Ozone is formed in the lower atmosphere by a reaction between nitrogen oxides NO_x and volatile organic compounds ("VOCs") in the presence of sunlight, primarily in the summer. Since ozone is not emitted directly into the atmosphere, the pollutants that combine to form ozone (VOC and NO_x) are regulated. The regulatory standard for ozone allows only one exceedance of the eight-hour standard per three-year period for an area to be considered in "attainment" of the standard. Sussex County is designated as a moderate (Subpart 2) eight-hour ozone non-attainment area. In addition, the one-hour ozone designation is still relevant; Sussex County is in a marginal one-hour ozone non-attainment area.

Since NOx emission control is discussed in the preceding Section, this Section will focus on the control of VOC emissions. As with NOx, the predominate source of VOC emissions expected from the IGCC project is from syngas combustion. Typically, combustion turbines use good combustion control and practices to minimize VOC emissions. However, in ozone non-attainment areas, the application of LAER is required. LAER for combustion turbines firing natural gas[redacted]

[redacted] similar to the Indian River IGCC Project, is the use of an oxidation catalyst to further reduce VOC emissions. NRG is proposing to use an oxidation catalyst to minimize increases in VOC emissions, and meet the LAER requirement. As DNREC develops plans and regulations to meet ozone air quality standards, it is unlikely that any further control will be required at the Indian River IGCC Project.

$PM_{10/2.5}$

The USEPA promulgated a new NAAQS for the 24-hour $PM_{2.5}$ standard and revoked the PM_{10} annual standard. Sussex County continues to record concentrations below the standard. The proposed CAIR regulations and Regulation No. 1146 have targeted the reduction in $PM_{2.5}$ precursors, NOx and SO_2. Since SO_2 and NOx emission control is discussed in the preceding Sections, this Section will focus on the control of $PM_{2.5}$ emissions directly.

The IGCC gasification process generates a raw synthesis gas ("syngas") that contains particulate matter from uncombusted coal and coal ash. Candle filters are used to remove the particulate matter in the syngas clean-up process. The very clean syngas is then fired in the two combustion turbines. The firing of clean gaseous fuels in combustion turbines achieves the lowest possible particulate emission rates for all conventional combustion processes, particularly compared to any coal-fired boiler equipped with baghouse, wet scrubbers, or wet electrostatic precipitators ("ESPs"). For example, a recent BACT limit for coal-fired boilers equipped with baghouse, wet scrubber, and wet ESP is 0.018 lb PM_{10}/MMBtu as compared to 0.009 lb PM_{10}/MMBtu for the proposed combustion turbines. [redacted] As DNREC develops plans and regulations to ensure compliance with $PM_{2.5}$ air quality standards, it is unlikely that any further control will be required for the Indian River IGCC Project.

Water Resources

The site is located on the southern bank of the Indian River, approximately three miles downstream of Millsboro, Delaware. The Indian River is part of the Inland Bays Watershed, three interconnected bodies of water: Rehoboth Bay, Indian River Bay and Little Assawoman Bay. The Indian River is approximately 15 miles long, starting approximately two miles southwest of Georgetown, and flowing east past Millsboro, its head of navigation. The Indian River generating station is located on the western end of Burton Island, which is bounded to the south by Island Creek. Island Creek discharges to the Indian River at Ware Cove. The lower six miles of the Indian River is a navigable tidal estuary, Indian River Bay, an inlet to the Atlantic Ocean.

DNREC has designated the Indian River (marine segments) to be protected for the following uses (DNREC, 2004):

- Industrial Water Supply;
- Primary Contract Recreation;
- Secondary Contract Recreation;
- Fish, Aquatic Life, and Wildlife; and
- Exceptional Recreation or Ecological Significance ("ERES") Waters.